Digital Learning Platforms India: A Comprehensive Review and Analysis

Dr. Meeramani N
Librarian, JAIN (Deemed-to-be University)
n.meeramani@jainuniversity.ac.in

Dr. Sharmila N
Research Scholar, Bharathiar University
sharmilanataraj13@gmail.com

Mr. Gururaj F. Duragannavar
Chief Librarian, Surana College,
fd.gururaj@gmail.com

Dr. Prasanna Kumar B.M
University Librarian, BLDE Deemed to be University
bm.prasanna@bldedu.ac.in

Abstract

The rapid advancement of technology has revolutionized education by bringing about digital platform that make learning flexible and accessible. This paper discusses an overview This research study offers a thorough analysis of digital learning platforms, including its characteristics, advantages and challenges. The study analyse various types of digital platforms including MOOCs, Learning Management Systems (LMS), and virtual classrooms. The paper also investigates the role of artificial intelligence, gamification and social learning in enhancing digital learning platforms. Lastly, it addresses the challenges and future prospects of these platforms in the context of learning.

1. Introduction

Digital learning is a significant part of today's world. It has become a powerful driver for change in education, providing fresh chances for individualized and inclusive learning experiences. Due to the availability of high-speed Internet connectivity, users can access the internet on their laptops, desktop computers, or mobile phones whenever and wherever they choose. People with disabilities may have equal access to digital-based learning because it is more accessible (srideviponmalar).

Digital learning refers to the systematic method of gaining knowledge o r skills by the efficient use of any kinds of technology devices, such as smartphones, tablets, laptops, or others. It covers the use of various strategies, such as online, blended, and distance learning (Adithya, 2021). Since the broad adoption of digital platforms, there has been a huge increase in digital learning. These platforms offer a variety of educational resources, instruments and interactive settings to promote efficient and interesting learning processes. To achieve this, the Indian Higher Education Ministry introduced digital-based learning. It aims to raise students' knowledge of technology, provide e-resources, and enhance their soft skills.

Advantages of digital learning

In comparison to traditional classroom-based learning, digital learning has a number of benefits, such as flexibility, accessibility, and individualized learning experiences. These are some of the key advantages of digital learning:

1. Students can access instructional resources and take part in learning activities using digital learning at their own pace and convenience. It is perfect for people with busy schedules or those who prefer self-paced learning because they may pick when and where to study. It is appropriate for people with busy schedules or those who prefer self-paced learning because they can pick the time and location of their studies.
2. Digital learning provides opportunities for individuals lifelong learning and professional development by accessing wide range of online courses, webinars an educational resource to stay up-to-date with the latest developments in their fields.
3. Digital learning making education more accessible and affordable for many since there is no need for physical infrastructure and travel costs lime like traditional education system.
4. Digital learning platforms include the communication and collaboration capabilities that enable students to communicate with teachers and peers through discussion boards, video conferencing, and virtual group projects. This encourages a sense of community and makes it easier for students to work together to learn.
5. Digital learning makes use of a range of multimedia components, including films, interactive simulations, animations, and gamified exercises. These tools can help students grasp and retain difficult ideas by making them more approachable and interesting.

In addition, digital learning eliminates geographic restrictions and gives students who might not be able to attend traditional schools access to education. It makes it possible for people from all around the world, including rural locations, to obtain top-notch instruction. Through the use of adaptive learning technology, digital learning platforms frequently provide tailored learning experiences. These tools improve students' engagement and comprehension by customizing educational activities and information to fit their unique needs, preferences, and learning styles.

This paper discussed an overview of digital leaning initiatives in India and its benefits for students, researchers and educational institutions.

2. Back ground of the study

(Aditya, 2021) explores the teachers' readiness in conducting digital learning in Yogyakarta, Indonesia by employing questionnaires to gather the data. According to this study, teachers thought they were pedagogically, psychologically, and technologically prepared to undertake digital teaching and learning. This study also found that teachers in rural locations were more likely to experience issues with digital learning. Online learning is viewed as a crucial component of instructional strategy by the majority of higher education institutions. The success elements for implementing online learning are described in terms of student happiness, convenience of access for teachers and students, and the availability of a variety of online tools. Online learning success variables also include teachers' experience with online instruction, students' readiness to learn online, and the calibre of the online environment's design and content. To identify and comprehend the success characteristics essential to implementing successful online learning, more study is needed. (Mahendra.et.al., 2022). In higher education institutions, the use of contemporary information and communication technologies (ICT) for teaching and learning is a crucial topic. Due to the previous model's inadequacy for preparing students for the complexity they would inevitably face in a society that is rapidly expanding, India's adoption of this new approach has become all but necessary. Information and communication technology (ICT) in higher education would help the current higher education system, according to the Government of India and the University Grants Commission (UGC) (Sridevi and Surendra Babu, 2018).

3.Research Methodology

This study confined only to the digital learning initiatives in India and its impact on higher educational studies. It also provides the various platforms available and its trends in recent years. In this connection, the researcher used secondary data to analyse the status of digital learning platforms and its impact on learners and educators in India. The secondary data is collected from various sources such as web portals, online education, distance learning, websites, search engine and online information providers.

3. Objectives

3.1 To know the various types of digital learning initiatives taken by the Govt. of India

3.2 To study the impact of digital learning on learners and educators

3.3 To explore the latest trends in digital learning platforms

3.4 To study the challenges and limitation of digital learning

4. Types of digital Learning platforms

4.1 Learning Management Systems

Learning Management Systems (LMS) are platforms that make it possible to manage, deliver, and track educational content and activities. They are used in digital learning. The management and organisation of online learning experiences are supported by LMS features like content repositories, assessment tools, discussion forums, and progress tracking.

4.2 Massive Open Online Course (MOOC)

Digital learning encompasses the delivery of complete courses and educational programs through online platforms. This includes Massive Open Online Courses (MOOCs), online degree programs, and other forms of e-learning that provide structured curriculum, assessment and certifications

4.3 Virtual Learning Environment

Virtual Learning Environments (VLEs) are created to emulate and improve traditional classroom experiences online.

VLEs, also referred to as Learning Management Systems (LMS), offer a full range of tools and capabilities to make it easier to manage, deliver and evaluate educational content in a virtual environment. VLEs make it possible to distribute different kinds of educational information, including multimedia resources, interactive presentations, audio recordings, and text-based publications. Learners can access these materials at their own pace and convenience.

4.6 Online Tutoring and mentoring platforms

Online tutoring and mentoring have grown in popularity in recent years because of their accessibility, convenience, and individualized learning opportunities. It offers online chat,

video conferencing, and interactive whiteboards as well as other communication tolls. With the aid of these tools, instructors, mentors, and students can collaborate to solve problems while interacting in real time and sharing screens

5. Digital Learning impact on students, Educators and educational institutions

The educational landscape has seen a considerable transformation due to digital learning, which has diverse effects on students, teachers, and educational institutions. The impact of digital learning on each stakeholder is summarized below.

5.1 Impact of digital learning on students

Learners have the freedom to access instructional materials at any time and from any location thanks to digital learning. With information that is customized to each learner's needs, learning preferences, and level of development, comprehension and engagement are increased. Online textbooks, interactive simulations, and a wide variety of other resources are all available on the internet. The growth of 21st-century abilities like critical thinking, problem-solving, and cooperation, which are essential for success in today's tech-driven world, is encouraged through digital learning. Connecting students from various geographical areas is made easier by digital learning. This makes it possible for cross-cultural communication, the exchange of different ideas, and global cooperation

5.2 Impact of digital learning on Educators

Educators can reach students who would not otherwise have had access to their knowledge by expanding their audience outside the four walls of the physical classroom. Digital tools made possible the teaching in tailored way to fulfil each student's needs and also helps the educators to monitor progress and modify their teaching strategies as necessary. Online learning environments provide instructors with the chance to develop their knowledge of modern teaching techniques and technologies. Their pedagogical methods may be enhanced by this ongoing learning. Digital learning is also impacted on efficiency in time by automating some administrative activities, like marking multiple-choice exams, can free up teachers' time to concentrate on deeper interactions with students. Digital learning encourages teachers to investigate novel teaching techniques including gamification, simulations, and virtual reality to make the classes more interesting.

5.3 Impact of digital learning on Educational Institutions

Digital learning has significantly transformed the landscape of educational institutions in various ways such as saving money on travel, maintenance and other physical infrastructure which benefits for both students and teachers. Institutions don't need to require international students to relocate in order to have a worldwide presence and draw them in. Digital learning helps the institute to produce statistics on student performance, engagement, and learning trends thereby institutions can utilize this information to enhance their instructional practices and curriculum development. A large number of students can take up courses since there are no physical classroom.

In conclusion, the flexibility, personalisation, and global connectivity that digital learning offers have changed the education system. Although it has many advantages, it also necessitates careful preparation, continual adaptation, and a dedication to upholding the standard of education in the digital space. The educational institutions need to invest in technology, training and support services to enable a seamless transition. Additionally, they must deal with issues like fair access to technology and any potential worries regarding the calibre of digital education.

6. Government initiatives for Digital Learning in India

India has seen a considerable growth in digital learning programs due to the rapid growth of technology and the need to increase access to high-quality education. To enable online education in India, a number of projects have been implemented, including:

6.1 DIKSHA (Digital Infrastructure for Knowledge Sharing)

DIKSHA is a digital platform which was introduced by the MHRD and NCERT in 2017 to enhance school education in India. It provides a variety of interactive materials, e-books, and testing tools in 32 different languages. With open-source technology, DIKSHA is part of the "One Nation, One Digital Platform" initiative.

6.2 PM E-Vidya

During the COVID-19 crisis, the government of India launched PM e-VIDYA on 30th May 2020.To provide multi-mode access to education, a comprehensive project named PM e-VIDYA, which combines all initiatives connected to digital/online/on-air education, is launched. Numerous online learning platforms have been introduced as a result of this effort to give students access to high-quality instruction.

6.2 E-Pathshala

Government of India, National Council of Educational Research and Training (NCERT), and the Ministry of Human Resources Development (MHRD) collaborated to create the e-Pathshala. On November 7, 2015, it made its premiere. It was created for displaying and disseminating various types of educational electronic resources, including books, audio, video, journals, and a wide range of other print and electronic resources. This platform serves as a conduit for instructional materials for instructors, students, and parents, researchers and educators.

6.3 Vidya Daan

Vidya Daan is developed on April 22, 2020, in the DIKSHA platform. Vidya Daan 2.0 will connect academics, businesses, and e-learning materials. With regard to content sharing, video conferencing, lesson plans for assessments, and question banks, Vidya Daan is quite beneficial. Vidya Daan started an integrated school and provided youngsters with higher education (Salim, 2021).

6.4 Pragyata

The PRAGYATA recommendations for digital education were published by the Ministry of Human Resources Development (MHRD). According to the PRAGYATA standards, only 30 minutes of screen time per day are recommended for engagement with parents in kindergarten, nursery, and preschool. For Classes 1–8, and for Classes 9–12, schools may hold live online classes for a maximum of 1.5 hours each day (Srivani, 2021)

6.5 SWAYAM

The Ministry of Human Resource Development of India has launched a great initiative called SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) with the goal of offering an integrated platform and portal for online courses that would encompass all courses in higher education, secondary education, and the skill sector.

6.6 NEAT

NEAT aims to apply artificial intelligence to make learning more customized and tailored in accordance with the learner's needs.

6.7 Swayam Prabha TV

The SWAYAM PRABHA is a group of 40 DTH channels that employs the GSAT-15 satellite to continuously transmit excellent educational content. Every day for at least four hours, the

students can choose when they wish to learn new information; this material will then be covered five more times throughout the day. The BISAG-N facility in Gandhinagar is where the channels are uplinked from. The content was a collaborative effort between the NPTEL, IITs, UGC, CEC, and IGNOU. The INFLIBNET Center maintains the webpage.

6.8 NPTEL (National Programme on Technology Enhanced Learning

NPTEL is an MHRD initiative that was started by the Indian Institute of Science in Bangalore and seven other Indian Institutes of Technology (IIT). It was established in 2003 to offer online instruction. The intention was to offer online and video courses in business, science, and engineering.

6.9 Shiksha Vani, etc.

The CBSE podcast Shiksha Vani provides timely, informative, clear, and seamless audio content for a variety of courses for grades 9 to 12. For users of Android smartphones, CBSE-Shiksha Vani is accessible via the Play Store. Currently, Shikshavani has 400 or so audio files of content that cover areas covered in the NCERT syllabus.

Emerging trends in digital learning

1. Application of Artificial Intelligence and machine learning

AI-powered systems are computer-based learning tools that simulate human teachers and can deliver engaging lessons without a human instructor. Students can have tailored learning experiences with on-demand training and feedback thanks to AI-powered solutions. AI base tutorial system offers a number of learning modalities and can host multimedia learning using text, video, audio, simulations, and games.

2. Micro learning
   Microlearning is a method of digital education where material is divided into smaller, more readily absorbed bits and presented in sessions of less than 10 minutes.
   Benefits of micro learning are:
   - Faster content delivery and consumption improves information retention
   - Increases student's engagement and supports mobile learning by encouraging studying on the fly
   - Enables personalised learning
   - Encourages self-directed learning

3. Augmented and Virtual Reality (AR/VR)
   The use of augmented and virtual reality (AR/VR), two major trends in educational technology has multiplied in the last ten year. In augmented reality, a computer-

generated image is placed on the spectator's perception of the real world. Virtual Reality (VR) offers the user a simulated experience utilizing a 3D image or environment that they may interact with in a way that appears to be "real" by using specialized electronic equipment. Through virtual reality, students learn trough experience and making education more engaging.

4. Gamification

Gamification in education is an approach that adds game features like scorecards, leaderboards, and awards into instructional modules and learning settings. By including elements of enjoyment, engagement, and healthy competition, gamification can increase the interactivity of learning for students. It motivates learners to learn with enjoyment and enhances their intrinsic motivation.

Benefits of gamification

- Increased level of engagement
- Real-time affirmation and feedback
- Integrated practical application into the classroom
- Makes learning fun and interactive

5. Block chain technology
   Blockchain is a decentralized, digital transactional ledger that permits safe information sharing. It is a digital database that may be shared through a public or private network, to put it another way. It assists teachers in creating curriculum and courses and thereby encourage and reward learning. Additionally, it increasing access to education for all facets of society and thereby saving the long-term cost.

7. Challenges and limitations of digital learning

Challenges and limitations associated with digital learning implementation in India are:

1.Digital literacy and technical issues

One of the major issues with digital learning for the younger generation is that computer competence does not always equate to digital literacy. The digital learning requires understanding the workings of multiple software, which presents a steep learning curve that can be difficult to overcome. A bigger issue is the ongoing technological difficulties that teachers and students encounter on these sites. The technological help needed to fix these issues with online education frequently interrupts the learning process.

2. Lack of In-person interaction

There are times when having the teacher and other students present in person creates a special environment that cannot be replicated. The physical model also keeps things organized because pupils are unable to turn off their cameras and fall asleep. Teachers are better able to provide more tailored instruction to each student in physical classrooms. On the other hand, pupils may benefit from interactive digital learning systems.

3. Infrastructural problems

Infrastructure requirements still exist. despite the fact that online learning doesn't need big buildings, big classrooms, chairs, tables, blackboards, or chalk. A computer, adequate software, consistent electricity, and high-bandwidth internet are in great demand. A limited few percent of the population in impoverished nations like India and many others have access to this caliber of infrastructure, which exacerbates their issues with online education.

4. Lack of EdTech and digital learning options for students with special needs
Specially abled students need instruction that is more personalised and hands-on. Although technology has advanced significantly, a teacher or other professional must always be available to help the student with their assignments. In comparison to their peers, special needs pupils have experienced academic difficulties as a result of these issues.

5.Lack of Discipline and numerous distractions

The majority of students find utilizing digital gadgets to learn boring, and they commonly bemoan their lack of motivation to complete assignments. Even teachers frequently bemoan their inability to engage the students, which causes both parties to lose interest. Due to the free use of laptops and smartphones in class, distractions have increased and frequently interfere with paying attention in class.

Conclusion and Recommendations

Based on the analysis, the paper will provide recommendations for future implementation of digital learning initiatives in India.

- Universities and educational institutions should also provide training and support to encourage the growth of digital literacy skills. Both teachers and students should have access to technical support so they can identify and address any issues. Schools and organizations should have technical support employees or contact information to help with any technical issues.
- Regular online office hours where students can speak with lecturers should be established. This would enable teachers to give each student particular attention and support them as they resolve any challenges they may be having with their assignments**.**

- Governments, educational institutions, non-profit organizations, private business and private funding organizations should invest in providing free access to access computers and the Internet
- To enable students with special needs to catch up academically with their peers, there needs to be a change in how educational technology is employed. EdTech products must be able to meet the needs of students with special needs. A customized learning plan should be created for each student.

In conclusion, this article will provide insights into the current state of digital learning initiatives in India. It intends to provide recommendations for efficiently utilizing technology to improve educational outcomes in the nation and to educate policymakers, educators, and stakeholders about the advantages and disadvantages of digital learning. We must prepare for the changes because in the not too distant future, online education will be a part of everyone's life. It is no longer merely a choice; it is now a requirement. With the use of modern technologies, the government needs to reach out to every village and provide people with the necessities of water, shelter, and education.

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