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Role of Digitalization in Higher Education with special reference to Eastern U.P

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Abstract

In ancient education, Institutions like Takshashila, Nalanda and Vallabhi stood out, promoting holistic development, while in the medieval period madrasahs and martabas shaped religious leaders and future scholars. But in modern period there are well known autonomous institutions like IITs and IIMs. University education represents higher education. Now in this modern era the learners are able to adapt the program to their schedules, accessing multimedia content and learning materials whenever it is most convenient for them. Online classes enhance participation and interaction. Students can now access virtual campuses and online courses from anywhere with a smaller budget. Digital technology equips students with various multimedia tools like videos, simulation and interactive activities for enhanced learning and engagement. Digital technology grants students effortless access to a wealth of information, facilitating research and learning. This paper try to present the role of digitalization in increasing the students enrollment in higher education, qualitative improvement, different digital initiatives taken by government, various digital tools and platform available for students in higher education.

Keywords: *Digital Technology, Higher Education, University Education*

Introduction

India has the third largest higher education system globally. A sizable portion of the population is still illiterate and many kids never receive their primary education. India's capacity to prosper in the contemporary global economic system depends heavily on its higher education system. In recent decades, there has been a very significant expansion in the number of institutions catering to this sector. To address the issue of low enrolment in higher education in India due to lack of

accessibility, the government has undertaken several steps to promote open education. Due to the significant number of Indian students who travel abroad to pursue higher education, competition from foreign college affects the demand for higher education in India.

The Covid-19 Pandemic forced the closure of educational institutions, disrupting the learning, assessment and examination structure of the Indian education system leading to an irreversible teaching and learning crisis, necessitating a sudden shift to online education. Digital technology equips students with various multimedia tools like videos, simulation and interactive activities for enhanced learning and engagement. It facilitates real-time collaboration among students on group projects, allowing them to share resources and communicate effectively regardless of their physical location. Digital technology enables teachers to monitor, student progress and customize instruction accordingly. Digitalization helps in administrative tasks like grading attendance and record keeping, teachers can allocate more time towards teaching and students interaction. The Pandemic has significantly expedited various digital processes to enhance economic growth, education, employment opportunities and interpersonal connections.

In reference to the development of digitalization some tools and resources have been used to improve the students experience in education some of which are platform like Zoom, Google Meet, Microsoft team and Skype. All these platform help in conducting online classes and building virtual classroom during and after Covid-19 Pandemic. Through digital technology education has become accessible anytime and anywhere for students. Students in remote areas or those unable to attend regular classes will greatly benefitted from this.

Some of the digital Initiatives taken by the Government are:

Swayam:

The Honorable President of India officially launched SWAYAM on July 9,2017. There are 2200 courses in which more than 50 lakhs students have registered on this platform and there are more than 1 crore enrollment in various courses. The Indian government's programme aims to attain the core education principles of access, equity and equality by providing the most disadvantaged with access to top tier teaching and learning resources.

Four quadrants of SWAYAM is-

- (1) Lectures via video
- (2) Readable reading materials that have been specially created.

- (3) Self- assessment via quizzes and tests.
- (4) A discussion board on the internet to address any questions.

Swayam Prabha:

The goal of SWAYAM PRABHA is to offer 32 top notch educational channels via DTH all day, all year long, throughout the whole nation. This would make it possible to deliver e-learning in a way that is both inclusive and highly cost-effective. It was launched by hon'ble president of India on 9th July 2017. Postgraduate and undergraduate curriculum-based course materials in a wide range of subjects, including the arts, sciences, commerce, social sciences and humanities, engineering, technology, law, medicine and agriculture are offered in higher education.

National Digital Library (NDL):

IIT Kharagpur has been tasked with creating the structure for the National Digital Library of India, offering a unified platform for e-content access. The goal is to establish NDL as a national knowledge asset that will serve as India's main engine for Innovation, technology, research and education.

E—Yantra

IIT Bombay is in charge of the E-Yantra project, which aims to provide embedded system and robotics instruction that is both effective and accessible to engineering college in India. With this initiative more than 275 colleges have benefited. E-Yantra assists universities in establishing robotics labs or clubs so that robotics is included in their regular training schedule.

Virtual Lab:-

These online laboratories would serve research academics as well as undergraduate and graduate students. By carrying out virtual lab experiment outside of lab hours at a time and location of their choice, students can reinforce their concept. Through this effort labs across a range of scientific and engineering discipline can be accessed remotely.

National Academic Depository (NAD):--

Academic awards are made available by NAD which operates a round the clock online platform to verify their legitimacy and ensure their secure preservation and convenient retrieval. NAD is an online repository for academic awards submitted in digital format by educational institution, School, boards and eligibility assessment agencies. Students can now access their academic awards online from anywhere and at any time.

Annual Refresher Programme in teaching (ARPIT):-

On November 13th 2018, the Ministry of Human Resource Development formally launched the Online Annual Refresher Programme in Teaching (ARPIT). This significant and innovative effort aims to provide 15 lakh higher education staff with online professional development through the use of MOOCs on the Swayam platform. Many discipline have been identified to create online training resources centered around the latest development, emerging trends, pedagogical improvements and effective teaching methodologies for revised curriculum.

Global research activities would be boosted and making the Indian system more competitive. Digitalization significantly enhance research processes and facilitates clearer communication between research and their guides. During the Covid-19 Pandemic digital technology has transformed education and enhanced the learning experience for students as many institution shifted to online classes. Digital technology is more personalized and collaborative learning environment, while streamlining the assessment and feedback process (Rajesh 2019). According to Frolova and Rogach (2021) using digital technology in education enhances practical skills and keeps learner engaged. Reducing live communication through e-content, video recording of lectures in the virtual space diminishes motivation to learn and narrow communication channels.

In the article “The Impact of Digitalization strategy in Higher Education: Technology and New opportunities”2022 the author writes that the pandemic has heightened the readiness for change towards digitalization in the university system. In the university setting, political decisions and pandemics significantly impact its structure. To ensure sustainable development public education, policies need to prioritize investment in digitalization and new technology for e-learning.

Objectives of the study:

1. To know the importance of Digitalization.
2. To know about different tools and platform provided by the government for students in higher education.
3. To know how Digitalization fill the gaps in between the students in urban and rural areas.
4. To highlight different challenges and opportunity of digitalization in higher education in India.
5. To mention the need of implementing digitalization in higher education.

Methodology:

Digital education refers to the application of digital tools and technology such as the internet and ICT devices in a creative way to intensify the educational experience, making it more engaging, immersive and widely accessible. This technology supports effective teaching and learning by incorporating digital tools. The increased role of digital education in schools has transformed teaching and learning through teachers reliance on technology. The government is implementing measures to broaden the digital education market and boost opportunities in various regions.

Goal of Digital Education in Eastern U.P: # Students innovation and creativity are fostered through digital education. It grants them access to a vast digital library for investigation. # Digital Education focuses on fostering digital literacy in students and educators. # The digital technology is adapted to individual learning style and paces. Digital education is tailored to individual learners. # Main aim of digital education is to make educational resources accessible to students at all time and from any location. # It strives to close the educational gap by providing access to learners in distant locations. # It aims to improve the standard of instruction. It also offers an interactive and engaging learning experience.

Advantages of Digital Education:

Reach- Through the internet satellite and digital devices, digital education extends its scope to remote areas it also guarantees nationwide access to quality education.

Flexibility- Digital education allows for flexible study schedule. The platform enables students alongside other obligations.

Cost Effective- Numerous free government programs exists for digital education. The program has made education accessible and affordable to everyone, including economically disadvantaged students.

Wide variety of courses-Digital education also brings wide variety of different courses students can opt. for any courses or any combination of courses according to their interest and background.

Interactive and personal learning experience-Through personalized learning and animation it offers interactive learning. One to one doubt clearing session is important characteristics of Digital technology.

Challenges and Opportunities of Digitalization:**Limited Technological Infrastructure**

Many universities have outdated technological infrastructure that hampers

the smooth integration of digital solutions. Poor access and connectivity can hinder the universities to connect digitally. Outdated and insufficient hardware can also prevent people in accessing digital service. In area with limited infrastructure, power outages, lack of maintenance and poor network reliability can disrupt digital services.

Resistance to change

Traditional Culture and tradition of teaching and administration making it difficult to introduce and adopt new digital technologies. There might be fear in the people that digitalization can bring job redundancies. Faculty and staff may be apprehensive about adopting new technologies.

No clear strategic vision for digital transformation

A united Institutional approach is crucial for India's higher education sector to effectively execute its digital initiative requiring strong leadership and a specialized team to confidently steer the process. A clear vision drives team and stakeholder engagement and investment in digital transformation.

Digital literacy

Since various stakeholders in higher education like students, faculty, Alumni, administration, society come from different background and have varied behavior does not possess the same level of digital literacy. Those who are less digitally literate may struggle to adopt and utilize new technologies effectively leading to disparities in implementation across department or individuals.

Emerging needs and Expectations of the student

Demand of the students are continuously increasing in reference to their experiences. They now require digitized administrative processes, unrestricted 24 hour access and multiple platform availability. Selecting right digital approach that serves the purpose of students is important for digital transformation.

Financial and technological constraints:

Due to the high cost of emerging technology and the financial limitations of higher education institutions, their adoption may be impeded. For successful implementation of digital strategy it is necessary to ensure that higher education has all resources for its implementation.

Other challenges:

Digital divide, level of security, Data protection and regulations are some of the other challenges that is associated with digital transformation.

Increasing use of digitalization of higher education significantly increases the cyber security risks and various other threat. Implementing digital initiative through a technology centric approach can lead to competition for limited resources, resulting in inefficiencies and conflicts. Managing a digital initiative in a integrated manner presents a significant challenge.

Conclusion

The post pandemic effect on higher education institutions in eastern UP underscores the resilience and adaptability of the sector. Higher education Institutions in Eastern UP quickly transitioned to online learning modalities to ensure educational continuity during and after pandemic. This shift required rapid adaptation of teaching method and technological infrastructure. This study also highlight the ongoing challenges and opportunities for innovation in delivering quality education in a rapidly evolving landscape. Higher education Institutions need to offer unique digital experiences for their stakeholders. To carry out their core mission effectively, higher education institutions must embrace digital holistically and integrate digital thinking into all aspects of their operations. The transition from traditional to digital methods in higher education in eastern UP offers numerous benefits, including improved access, scalability, flexibility, cost-effectiveness, enhanced learning experience and preparation for the digital age economy. Digital technology expands access to education by enabling students to research extensively and learn flexibly. Addressing the challenges like digital literacy, financial and technological constraints, level of security in India higher education system is crucial for its growth. India contribute significantly to digitalization due to the presence of advanced ICT and information infrastructure. The history of higher education in eastern UP reflects a blend of historical legacies, governmental policies, societal changes and technological advancements, contributing to the region's educational diversity and development.

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