A Paradigm Shift in India: Digital University

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The education system is going through significant changes due to the active development of digital technologies. By year-end, it is anticipated that many Indian universities will receive funding, either for standalone new independent institutions or for building digital university centres inside existing traditional universities. This study employs the literature search to explore the concept of a digital university and outlines the various causes of its development, challenges and prospects. It was found that Digital universities has potential to increase the Gross enrolment ratio in higher education, but there is a need to bridge the digital divide. Then only digital universities will act as a hub for equal access to quality higher education for prospective students and work as a catalyst in a paradigm-shifting of digitalisation in the higher education system in India.

Introduction

Education is one of the most impacted fields by the COVID-19 lockdown because students could not receive a proper education. In India, there are not enough universities only limited options are available for prospective students and pandemic have just compounded the problem. In light of this, Finance Minister Nirmala Sitharaman introduced the PM e-Vidya: one nation, one digital platform initiative encompassing numerous online learning programmes to offer students a high-quality education. The National Education Policy (NEP) 2020 outlines a strategy for the renaissance of India's education system. The policy emphasises that our approaches to teaching and learning have to change due to the development of digital technologies. Universities need to restructure their operations and offer flexible educational institutions employing a combination of digital media and information technology for digital education to reach the economies of scale required in India. Establishing a digital university in line with the NEP's goal was announced in the budget for 2022–2023.

Digital university

The concept of the "digital university" is still in its infancy. Specialists require a strategic, holistic investigation of the term Digital University.

1.1.1 An example of a digital university is **MIA digital university** in Barcelona, Spain. It is an international digital university.

1.1.2 By implementing suitable pedagogies and learning environments, these Digital University works toward knowledge generation, application, and dissemination to create competence that significantly contributes to society's successful transformation and progress. (About Us – Digital University Kerala, n.d.)
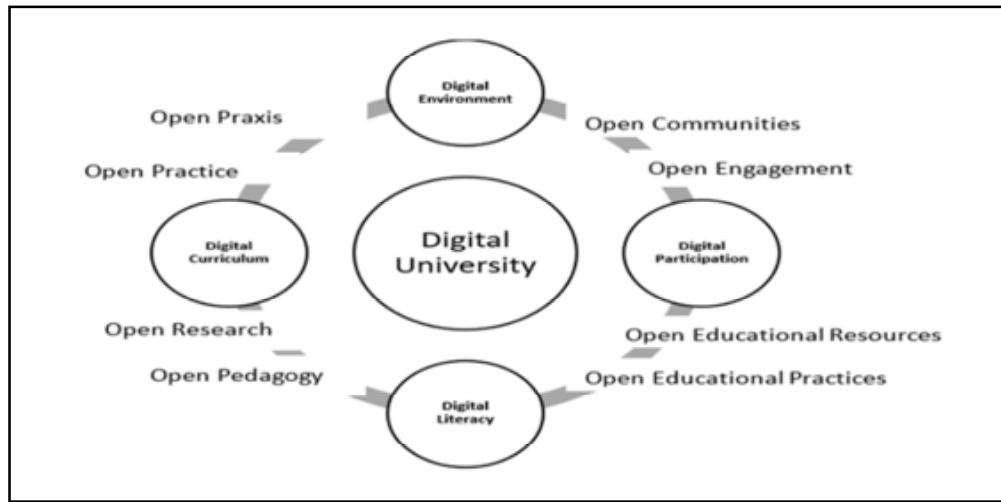
Figure 1: The hypothetical model of Open Digital University adapted from Johnson, MacNeill and smith, 2018. (Grosseck et al., 2019).

1.1.3 In the simplest terms, a "digital university" is a higher education establishment that exists in the binary form and includes digital infrastructure for digital learning, digital competencies of the academic staff to facilitate teaching and research and is legally authorised to award academic degrees. Digital University travels the geographical boundary and offers access to higher education credit and non-credit programmes via asynchronous technologies over the internet or other electronic media rather than through traditional classroom settings. This institution is also known as Telematics University or Virtual University because they do not have a physical location besides the administrative building, as in the case of bricks and mortar institutions. A digital university, according to Johnston & MacNeil (2013), consists of the following interconnected components:-
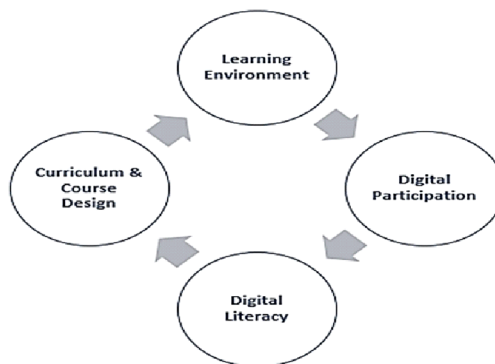

Figure 2: MacNeill and Johnston's suggested model of constructs and relationships for a digital university (Johnston & MacNeill, 2013)

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1.1.4 A hub and spoke architecture is proposed to build the Digital University. According to the hub and spoke model, everything will be transferred from a central "hub" to other locations known as "spokes".
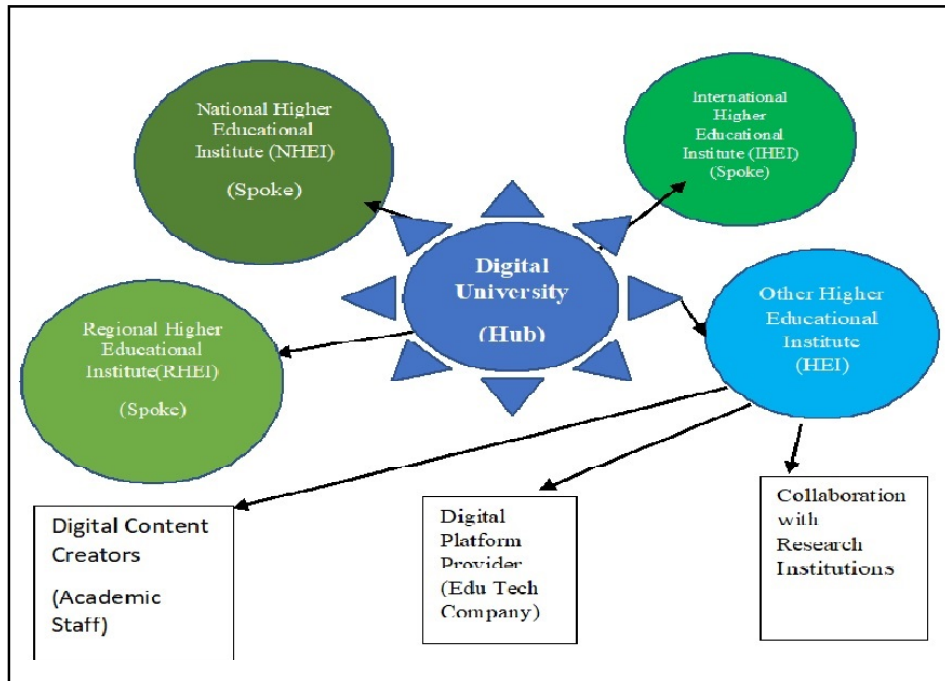

Figure 3: shows the Digital University Ecosystem: Hub-Spoke Model.

Higher education in the Digital Era

Today's world is continually evolving numerous facets of human activity are seeing innovation. The education sector is not an exception and is changing more quickly than ever before; higher education's function is evolving to guide individuals toward lifelong learning, improving their knowledge, skills, and competencies, and acquiring new activities in connected economic sectors (Grosseck et al., 2019). Universities also face ongoing pressure from various socioeconomic developments, including globalisation (which increases rivalry for exposure and funding), demographic difficulties (urbanisation, an ageing population, and declining natality), and a move towards a more technological society. Universities are therefore forced to balance juggling the requirements and expectations of students with functioning in a digital environment, integrating national policies and initiatives (implicitly the curriculum), and operating in a digital setting. As a result of the increased need for digital education, new efficiencies have emerged, including the sharing of course modules among university clusters, online learning, and teaching using artificial intelligence (Borch et al., 2015). Because of this, everyone agrees that education plays a crucial role in promoting human growth and fulfilment, economic growth and productivity, and political and social cohesion. This includes people from different groups, corporate organisations, and government agencies.

Incorporating digital technology into the university

We are feeling the effects of automation, robotics, and digitisation on our lives more and more keenly every day. At the very least, students bring one of the following to school: a laptop, a tablet, or a smartphone. The general use of computing and digital communications infrastructure and its integration into regular university operations are the critical aspects of what is meant by the phrase "digital university". Despite the term "Digital University" being used increasingly frequently, there are still certain ambiguities that might confuse. A Digital University, according to some, is a response to the significant movement toward new technology since "Digital is here and it is here to stay and significantly more profoundly evolve" (MacNeill & Johnston, 2013). The idea of a "Digital University" is fundamental to how institutions may remain competitive and relevant in the modern world. "these colleges fail to see that all they need is a business plan appropriate for the digital era; they do not require a digital strategy" (PWC, 2015).

Additionally, today's kids are "customers who carry their expectations from the digital world into the classroom" (PWC, 2015). With millions of young customers who are well aware of their expectations and how their money is being spent, a Digital University may be a consumer-friendly company. The crucial fact is that a digital university is an evolving concept, a complex system that involves digital infrastructure for digital learning, digital capabilities of the academic staff and digitally savvy students, and coherent policies. Whatever we choose to call it; digital strategy, business strategy for the digital age, consumer-friendly business, etc.; it is always a complex system. Specialists might approach "key concerns for strategic growth in a more holistic manner" by investigating the phrase "Digital University" (Johnston & MacNeil, 2013).

A worldwide knowledge system and information and communication technology are emerging, reflecting global influences impacting higher education, and are being progressively incorporated into the current educational system to reinforce the practical orientation (Lynch, 2008). At the same time, it should be noted that the informatisation stage is the last one because teachers and students use information technologies in the educational process and all educational institutions are equipped with computer technology (Martin et al., 2019; 'The EU General Data Protection Regulation (GDPR)', 2020).

Digital University: Indian initiative

The Budget 2022-2023 announcement states that a central digital university will be established. A digital university will provide access to high-quality higher education in various Indian languages, coinciding with the objectives outlined in the National Education Policy 2020.

❖ The first digital university in India is the Kerala University of Digital Sciences, Innovation and Technology, establishedon 18th January 2020 by modernising the Indian Institute of Information Technology and Management, Kerala (IIITM-K). It is a state university inThiruvananthapuram, Kerala (Digital university comes into being - The Hindu, 2021).

❖ Another digital university, Rajiv Gandhi Fintech Digital Institute, is approved for establishment in Jodhpur by the Rajasthan government.

2. Review of Literature

Coronavirus pandemic has fostered the need for transformation of university according to digital age. These transformations include progressive changes in four interdependent tradition teaching system namely resource, format, environment, & platform into digital technologies driven learning model (Neborsky, 2021). Teachers, students, and stakeholders will have better prospects due to the university's digital transformation in the framework of digitalization (Safiullin & Akhmetshin ,2019). Digital transformation is pervasive as the "changes digital technology is creating or impacting all facets of human life". (Digital Transformation Does not Mean innovation, 2018). This emphasis on change is innate; digital transformation is not only about technology or invention; instead, it contains an element of inevitability that has characterised as "not an issue of it, but a question of when and how?" (Digital Transformation Is About Talent, Not technology, 2020). It then moves on to the leadership domain because, with digital transformation influencing every part of an organisation or business, leadership is crucial for guiding the change (Lane, 2012). Developing technologies will require a steady development of working methods, systems, and processes throughout the system to provide user value. This is known as the "journey" of digital transformation (Kryukov & Gorin, 2017). Like every other industry, higher education must consider the digital transformation agenda to survive and prosper. The rising importance and interest in the worldwide rankings of universities signify that higher education has been subject to global marketisation and is highly competitive. Universities fight for funds, prestige, and talent (staff and students). The importance of higher education in increasing a country's competitiveness and fostering social cohesion is now widely acknowledged. Numerous parties are interested in its impact (Ernst & Young, 2018).

In response to the fast-shifting educational requirements, Ficci and Ernest-Young produced a study in 2018 outlining a model that will serve as inspiration for future research in this area and as a fresh starting point for all workers involved in the transformation process. Technology is a vital catalyst for advancements in the field of education. The paper claims that the transition will improve this environment on four levels. Stanford University's choice to enrol in an online, in-person, or mixed programme is an excellent illustration of how an in-degree might be accepted. Nevertheless, without discrimination, it offers all students a "Stanford degree". A degree from NYU or the University of Michigan does not specify if it was obtained online. Another study presents a model for integrating information technology into the university's ongoing procedures. This study showed an eight-level process control to handle the digital transformation process more. As mentioned above, the administration of the techniques is also covered by the activities at a lower level, which acts as their foundation (Digital Technologies as Education Innovation at Universities, Australian Educational Computing, 2017). Two studies consider how the institution is transformed by digital technology. A process management model was offered in the paper by Ficci and Ernest-Young, which provides insight and illuminates a new direction for all personnel engaged in this transformation process and researchers in the area.

3.   Objective of the study

The present studyis carried out keeping in view the following primary objective of the study:

i.   To know theconcept of a Digital University.

ii.   To identify the factors for the emergence of a Digital University in India.

iii.   To investigates the prospect of Digital Universities in India and

iv.   To investigate the problems associated with Digital universities in India.

4.   Methodology

The literature exploration is done to elicit the needed literature according to the objectives of study. Accessible scholarly literatures related to the digital university were reviewed to show the paradigm shifts in the digitalisation of the higher education system in India.

5.   Finding of the study

Analysis of the retrieved literature on the topic during the literature search process show the following results:

5.1 Factors for the Emergence of Digital University

5.1.1 Shifting Environment

 The last decades of the twenty-first century have seen an enormous increase in the popularity of online learning, which has changed the nature of all digital education resources. Once considered the primary sources of information for students, standard libraries have been replaced by digital libraries, and newer generation students born in the digital era are more familiar with native digital resources. This represents a change in the manner and means of education. Fixed number of seats in mortar Higher Education Institutes, absence of higher education institutions close to where the student's locality, especially in Rural India, the scarcity of universities left prospective students with few options, made it necessary to change how we deliver higher education.

5.1.2 Current Learning Model ineffectiveness

 There is a rising realisation that the traditional university education system is constrictive and has fallen short of the needs of students' interests, financial circumstances, and diverse cognitive abilities. Therefore, it is necessary to create a flexible education system that can deliver top-notch education whenever and wherever it is needed.

5.1.3 Distance Education

To ensure world-class universal education with a personalised learning experience at doorsteps.

5.1.4 Pandemics

Covid -19 lockdown has halted the education system of the whole world, including India. Students were deprived of quality education due to closing of their educational institutions & the lack of adequate e-learning infrastructure.

5.1.5 Inflation

Financially disadvantaged students find it difficult to afford living expenses near their place of studies, such as House rent, travel expenses, and other costs.

5.1.6 Government Initiative

On July 29, 2020, the Indian government unveiled its new national education policy (NEP), which calls for substantial changes to the educational system to adhere to India's 21st century educational strategy. The creation of a digital university is funded in the union budget for 2022, which would pave the way for the digitisation of higher education and assist India in becoming a global knowledge provider; the state governments of Kerala and Rajasthan have already approved established the digital universities in their respective states.

5.2 Prospect of Digital University

Online education served as the country's sole source of digital learning in 2019–20 when both India and the rest of the globe were battling the COVID–19 epidemic. A report on the quick switch to remote learning during the ongoing coronavirus outbreak was released by UNESCO in early March. Two hundred ninety million youngsters studied at home during that period due to the partial or complete closure of schools and institutions in 22 nations. Following are the significant prospectsof the digital university in India.

5.2.1 Widening Access

Digital universities will provide flexibility in terms of place & time. Students can learn anywhere at any time, and high-quality universities disseminating higher education will be available on a round-the-clock basis throughout the country's length and breadth.

5.2.2 More student Enrolment

Digital universities will help increasethe Gross enrolment ratio from 27 % to 50 %, as laid out by the NEP 2020, whichcannot be possible in the case of the bricks & mortar universities due to the limited number of seats.

5.2.3 Immediate Feedback

Students studying at digital universities will benefit significantly because they can receive timely and personalised instant feedback regarding their doubts or inquiries from their teachers even after teaching hours. Through the use of contemporary communication technology, such as virtual meetings, chat, etc.

5.2.4 Promotes distance Education

Distance education & blended learning platforms can be integrated into the digital university once the university gets rolling.

5.2.5 Equity

All members of society can have equitable access to high-quality higher education through digital universities. Regardless of whether they are women who were prohibited from going outside the home to continue their education after marriage, particularly in rural India, or differently abled students who are physically unable to travel to their dream universities to attend physical classes regularly, digital universities can be a blessing for those disadvantaged social groups.

5.2.6 Transfer of Credit

All students will benefit from the provision to get their academic course credit transferred from digital universities to regular mode & vice versa.

5.2.7 To meet the specific needs of all types of students, high-quality study materials will be made available in different Indian languages and multimedia forms.

5.2.8 National Academic Depository (NAD) will ensure the authenticity of degrees, diplomas, certificates, mark sheets etc. and will help maintain an online storehouse for various academic activities.

5.3. Problems of Digital University

5.3.1 Digital Divide

Various reports, such as 75th National Sample Survey and Mission Antyodaya 2020, show dramatic urban-rural disparities. Similarly, UNESCO 2021 report entitled "Reimaging our futures together: a new social contract for education" shows there is a vast digital divide in terms of access to reliable connectivity, hardware, and access to electricity, especially in rural areas. All the students do not have equal access to digital resources. Expecting them to rely only on e-resources for learning at the new digital university seems to mock the challenging economic conditions they face. This put them at a double disadvantage if digital modes become the mainstay of education.

5.3.2 Internet Coverage

One of the essential requirements for digital education is the accessibility of reliable Internet connections to everyone. The growth of digital India is negatively impacted by intermittent Internet connectivity, frequent power outages, financial barriers to obtaining a high-speed Internet connection, and limited access to digital education.

5.3.3 Accreditation & Quality Assessment

Digital universities differ from traditional mortar universities. Different mechanism needs to be standardised for accreditation of the digital university. Adopting e-learning during the epidemic crisis was a temporary solution because neither the students nor the professors had much previous experience with it. Without a clear structure for the new digital university, utilising that expertise may not be particularly helpful. A strong pedagogy, a well-designed curriculum, and qualified instructors are necessary for the new digital university. We cannot just transfer traditional classroom methodology and material to online learning environments. We require an empirical study of digital pedagogies.

5.3.4 Absence of Environment

Teaching in person is always richer in content than digital learning modes because the aesthetic value is lost. There are no buildings or campuses to visit. Learners lose the face-to-face contact, emotion, and engagement only achievable in a brick-and-mortar system. Students obtain educational materials online.

5.3.5 Technical know-how

Academic staff members lack the digital skills to use electronic devices, making them less proficient at teaching online. Another problem is training teachers; only when academic staff members are well-versed in technology can they successfully run digital classrooms.

5.3.6 The Peculiarity of Courses

Education field is diverse. It would be very challenging to convert all systems totally into the digital mode, especially laboratory-related courses as in the case of science & technology.

5.3.7 Risk of Unemployment

Job security for academic staff is vital. They anticipate that, eventually, technology will supplant teachers, leading to fewer teaching vacancies in the future.

5.3.8 Fake Universities

The concept of a Digital university may work as a breeding ground for the emergence of many fake universities, e.g., "The Digital University of Skill Resurgence," Wardha, Maharashtra. In this case, the University Grant Commission, through its public statement, declared that it was a fake university. But, in practice, it is pretty challenging to timely cross-check all of these types of bogus universities.

6. Conclusion

The Indian educational system has seen several modifications, from the traditional gurukul system to the modern digital education system. The proposed Digital University will establish India as a global leader in Digital education, which is a positive step. However, it would be premature to predict that digital universities

will take off in India. The nation's digital divide must be bridged with the aid of the government & non-government organisations. The most logical action is incorporating digital technology into the established classroom structure. PM e-Vidya is one of the initiatives that aim to integrate all efforts related to digital education such as Swayam Prabha, Diksha, e-PGpathshala, National Digital Library, Swayam, E-yantra, and Virtual Labs as one nation, one digital platform and can be easily incorporated into the digital university. This process is known as blended learning or hybrid learning. Then only, higher education in India may be made equitable and of good quality.

There is a proverb that goes, "Experience is the best university". Even though it is practically impossible to foretell the future, it is essential that all changes should be made on sufficient evidence-based research and should use our own experience as a tool to make improvements to the current uneven landscape of Indian education system that only can keep us alive in the 21st century.

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