

Digitalization in Higher Education - Issues and Challenges in the Context of State Universities of Bihar, India

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ABSTRACT

Like all other institutions, digitalization is helpful in higher education. This simplifies the processes involved in an academic institution and brings transparency. The pandemic COVID-19 has put pressure on the higher education system to switch from traditional to digital mode. The developing countries where digitalization is in its infancy are facing more problems. Bihar, which is a state of India, is also struggling with this situation. In this study, an attempt has been made to know the status of digitalization of the state universities of Bihar. A desktop study was conducted to investigate the issues and challenges of digitalization in the state universities of Bihar. This was followed by interviewing faculties of different state universities of Bihar. Study results show that state universities will have to digitize academic processes in a phased manner. The interest of teachers and students is very high, and they are continuing online education with limited resources. Systematic and continuous efforts are needed to digitize higher education in the right way.

Keywords: Digitalization; Higher education; State university; ICT.

1.0 Introduction

COVID-19 was declared a pandemic by WHO on 11th March 2020 (WHO, 2020). The spread of the virus was exponential, and India announced a complete lockdown on 25th March 2020, as a pause button. The lockdown was extended in phases till 31st May 2020. After that, the process to unlock was started by the Central and State Governments of India in a phased manner. At present, the list of prohibited activities is concise but educational institutes are not allowed to start the teaching-learning process (Union Home, 2020).

Traditionally, the Indian education system is based on physical classroom teaching. With a few exceptions, most of the state universities are dependent on physical contact hours. This study is an attempt to explore the present status and associated issues and challenges of digitalization in higher education in the context of state universities of Bihar, India.

2.0 Methodology

The study was limited to the state universities of Bihar, India, as they cater to the major sections of society and have a large number of student enrolments. A two-pronged approach was used to have a better understanding of the subject. First, the desktop study was conducted to investigate the issues and challenges of digitalization in higher education. The website of all the state universities of Bihar with student enrolments close to fifty thousand or above was explored for relevant information. Second, the professors of state universities of Bihar were interviewed with an open-ended questionnaire over the phone, or the link of the questionnaire was circulated to get the primary data. It was aimed to understand the opinion of the professors about the present status of digitalization in state universities. In total, the view of 21 professors was taken either by telephonic interview or online circulation of questionnaires. The various approaches to data collection were used as they supported each other. Data collection was done in the month of September 2020.

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3.0 Digitalization in Higher Education

Digitalization in higher education has various aspects and it has been ignored for decades. Transformation of the Indian higher education system is required. To implement the online education system effectively, modification of entire higher education system is the need of time (Jha & Shenoy, 2016). But the transformation must be done in phases, and overnight changes must not be expected. Unfortunately, the higher educational institutes are not equipped to match the pace at which industry upgrades (Maram, 2019). Digital education can facilitate the higher education system to bridge the industry-academia gap. It has the reach to remote areas and can benefit the students of rural India.

During the last decade, India is using technology in education to reach rural areas, improve understanding and create awareness (Akash, 2018). Digital accessibility in higher education in India is at its different levels of development in various parts of the country. The level also varies with the type of institutions like central universities, state universities and deemed universities to name a few. Bihar is establishing itself as the educational hub for Eastern and North-Eastern India (Rani, 2019). There are thirty universities in Bihar, including three central universities, nineteen state universities, one deemed university, and seven private universities in Bihar (UGC, 2020). The state universities have a wider reach and cater to the mass.

The nineteen state universities of Bihar are located in various Bihar districts and are the only hope for the lower middle class and rural students. Table 1 illustrates the state universities of Bihar with student enrolments close to fifty thousand or above. These six universities are providing higher education in various streams like Science, Arts and Commerce. Moreover, the professional programs in Computer Application, Management, Mass Communication, Library Science, Fish & Fisheries, Journalism, Law and Ayurveda to name a few are also offered. The total student enrolments in these state universities show the mass acceptance of the programs offered.

4.0 Discussion

The academic institutions are closed since the last six months due to COVID-19. It is understood that there is an urgency to switch from an on-campus higher education system to an approach where contact hours within the university campus can be optimally reduced. This is only possible if digitalization in higher education is implemented in the true sense. By and large, the dependence of state universities on traditional teaching methods is very high.

Government agencies are trying to expedite the development of e-content and encouraging online and distance learning (UGC, 2020) in the present crisis. Probably, it is the only option available to maintain the continuity of teaching and learning. However, the bitter truth is that the higher academic institutions are not fully equipped to switch to online teaching-learning process except the reputed ones like IITs, IIMs and a few well-known universities.

4.1 Status of digitalization in state universities of Bihar

Out of nineteen state universities, fifteen universities have furnished the web address on the UGC website (UGC, n.d.). The web address of the remaining four state universities namely Bihar Animal Sciences University, Munger University, Patliputra University and Purnea University were searched from Google.

The websites of all the 19 state universities were accessed on 17th September 2020 to check their status. It was found that out of fifteen state universities, who have furnished web addresses on the UGC website, seven were incorrect or not updated. The correct web addresses of these seven universities were searched from Google. Surprisingly, a functional web address of Veer Kunwar Singh University could not be found from any source. (See Table 2)

4.2 Investigation of the website of select state universities

The website of six state universities with student enrolments close to fifty thousand or above was investigated for the information on online learning, e-content and digitalization of the education system. The findings are undermentioned-

1. Babasaheb Bhimrao Ambedkar Bihar University: The University has moved a step towards the digitalization of the education system. It is declared that in X plan, UGC has proposed to establish UGC Network Resource Centres (UGC-NRC) in colleges, and assistance is available for computers and internet connectivity (B. R. Ambedkar Bihar University, n.d.). The website has provided a hyperlink for the new website, which is well organized. Under quick links of the new website's home page, the hyperlinks for undergraduate admission, post graduate admission, results, syllabus, etc. are furnished. The hyperlink "Student Counseling Lecture Video" directs to the YouTube channel – BRABU Lectures. Seventy-eight videos are available on various subjects related to the programs offered by the university. The lecture videos include graphics and digital photos to make the presentation interesting and informative. A hyperlink "Study Materials (PDF Format)" has scanned copy of handwritten notes or book chapters (B. R. Ambedkar Bihar University, n.d.).
2. Jai Prakash Vishwavidyalaya: Unlike B. R. Ambedkar Bihar University, the website of Jai Prakash Vishwavidyalaya is not well designed. However, the important informations like links for lecture videos and notes are available to support the students' learning (Jai Prakash University, n.d.). The website directs to a YouTube channel that has a separate playlist for different streams. Screencast, Video Show, Kine Master etc. are used to make lecture videos. Scanned copies of handwritten or typed study materials are made available to students by creating a Facebook page named "Jai Prakash University, Chapra". A hyperlink for a Twitter account is also given for students, but the tweets are protected and only approved followers can see. Hyperlinks for admission and results are available on the website.
3. Lalit Narayan Mithila University: The study materials are made available to students by sharing Google Drive links for undergraduate and postgraduate programs (L.N. Mithila University, 2020). The university website directs to the SWAYAM portal, which has many online courses. The university offers free online courses to impart software training in collaboration with Spoken Tutorials, IIT Bombay. The university has included these online courses as MOOCs (Massive Open Online Courses) for practical courses (L.N. Mithila University, 2020).
4. Magadh University: The University has provided hyperlinks that direct to the portals of SWAYAM, SWAYAMPRAKHA, National Digital Library and e-PG Pathshala under the digital initiatives section. Online lectures are uploaded on YouTube, and hyperlinks are furnished for various programs as e-content under "Online teaching and reports" (Magadh University, 2020). The syllabus, admission information and examination details are made available to the students.
5. T.M. Bhagalpur University: The hyperlinks for e-content in the form of YouTube lecture videos on the YouTube channel "Tilka Manjhi Bhagalpur University, Bhagalpur" are furnished. Google Drive links are also provided for class notes (Tilka Manjhi Bhagalpur University, n.d.). The hyperlinks of SWAYAM portal, e-PG Pathshala and Spoken Tutorial are furnished on the website's home page. Students can get the information regarding admission and examination online.
6. Veer Kunwar Singh University: The web address furnished by the University at UGC website is non-functional. Google search shows a web address - <https://vksu.ac.in/new/> which is also non-functional. Another web address - <https://vksuonline.in/> is found in Google search, which has relevant information for admission 2020-21 like admission rule, important dates, seats

availability etc. (Veer Kunwar Singh University, 2020).

4.3 Opinion of professors

Professors have accepted the new role and are eager to learn and redesign their lecture plan with the help of available technology. They need support in terms of infrastructure, faculty development programs and workshops. A respondent from Babasaheb Bhimrao Ambedkar Bihar University noted-

“Due to lockdown and lack of prior planning, training or FDP couldn't be conducted properly by state universities earlier but now it's being organized.”

The major issues and challenges of digitalization in state universities are inadequate infrastructure, lack of technological awareness, poor internet connectivity, and course structure and examination system. The students have communicated a mixed response to professors about online classes. They face poor internet connectivity problems, lack of technological awareness, and monotonous one-way communication during online classes. For example, when asked about the acceptance of the hybrid or online learning mode among students, a respondent said that

“It has a mixed reaction, as there are many reasons behind it. Like lack of awareness of technology, one-way communication, poor connectivity and so on.”

Professors are trying alternative approaches to reduce the academic loss of students. They are connected to students with simple means like WhatsApp or Facebook. They are taking online classes through various apps like CISCO WebEx, Google Meet, Microsoft team, Zoom etc. These alternative methods have many questions associated with them, especially in the context of state universities of Bihar. Like - Is there learning during the online contact hours? Are the facilities available to conduct online classes sufficient? Is the university ready with the basic training modules to conduct and attend online classes for faculties and students? For instance, a respondent from Patliputra University pointed -

“Lack of Infrastructure and digital awareness as hurdles to adopt the hybrid or online learning mode.”

4.4 Initiatives of government of India

The Central Government of India has launched a ₹9,000 crore plan to transform the education system of schools and colleges. The goal is to digitize the education delivery and adopt a new interactive pedagogical approach called flipped learning (Nanda, 2019). Ministry of Education, Government of India, has taken information and communication technology (ICT) initiatives to improve efficiency and effectiveness of the higher education system under National Mission in Education through ICT. Audio-Video e-contents are made available by SWAYAM and SWAYAMPBHA. SWAYAM makes Massive Open Online Courses (MOOCs) available to learners free of cost, and SWAYAMPBHA telecasts educational programs on a 24X7 basis (Department of Higher Education, 2020).

Access to journals and e-books is permitted to students and faculties by the virtual repository of learning resources like National Digital Library, e-PG Pathshala, Shodhganga and e-Shodh Sindhu. Similarly, other ICT initiatives are taken like e-Yantra, FOSSEE, Spoken Tutorial, Virtual Labs, SAMARTH, VIDWAN and Shodh Shudhhi to improve the quality of education (Department of Higher Education, 2020).

4.5 The path ahead

Digitalization in higher education is an untapped section in the state universities of Bihar. It offers many benefits to an academic institute. It ensures smooth operations that may be teaching-learning process or administrative tasks. Transforming a university's entire academic and non-

academic operations into a digital system has substantial financial implications and complexity. However, the management should plan phased digitization based on priority. The essential academic activities like admission, teaching-learning and examination should be digitalized initially.

Higher education institutions should choose an effective Learning Management System (LMS) to integrate online teaching-learning aspects. This is a tool that eliminates or reduces the requirement of campus attendance, and the students can learn at their own pace in the comfort of their homes. LMS enables the teachers to interact with the students, share content in the form of videos or documents, and assess students' progress. Also, students can discuss among themselves, submit assignments, and pause, rewind or play the lectures whenever needed. The popular Learning Management Systems are Moodle, Blackboard, Canvas by Instructure, Google Classroom, Gnomio to name a few.

The flipped class and hybrid class concepts can be understood and implemented as per the suitability of a course or a program. The flipped class will ensure personal learning space for each student. In Hybrid classes, traditional and online approaches should be clubbed so that the advantages of both systems can be harnessed.

MOOCs (Massive Open Online Course) are available online and free of cost. Students should be encouraged to register in the suitable MOOCs and a fixed percentage of the total credits of a program can be offered by this means.

5.0 Conclusion

Education and development of any society go hand in hand. This study has investigated specifically the state of digitalization of state universities of Bihar. The results have highlighted the poor internet connectivity, lack of technological awareness and inadequate infrastructure as major barriers to online classes. These barriers have a negative impact on the acceptability of digital education among teachers and students. 5G network connectivity which is expected in near future is required for seamless online learning. Customized training modules should be developed to create technological awareness among various stakeholders of digital education. University administration should utilize the funds available under government schemes to expand the infrastructure for digitalization.

Despite of hurdles, the teaching and learning process is being enjoyed by teachers and students. The use of social media like Facebook, WhatsApp or Twitter for transferring study material or academic information shows the high involvement of teachers in the present extraordinary situation of COVID-19. Teachers are using free apps like Video Show or Kine Master to make Lecture videos.

Digitalization of state universities is required in a professional way to give an edge to the present education system. The concerned Government agencies and state university administration should come forward to develop a uniform LMS implementation plan. The pedagogical approaches-flipped class and hybrid class should be adopted based on the need of a program. MOOCs should be included in the course structure. All stakeholders must be sensitized to digitalization in higher education.

The Government of India has taken several initiatives under National Mission in Education through ICT but they have to be publicized so that people get the correct information at the right time. The media should prioritize the news related to education and educational schemes. This will help in strengthening education.

The results of the study may be used to plan digitalization in higher education in the state universities of Bihar. The study has assessed the present state and scope of digital education in Bihar. Further research can be conducted on central universities, deemed universities and private universities of Bihar to check the validity at large.

Table 1. State Universities with Student Enrolments Close to Fifty Thousand or Above

Sl. No.	Name of state university	Year of establishment	Student enrolments
1.	Babasaheb Bhimrao Ambedkar Bihar University	1952	87826
2.	Jai Prakash Vishwavidyalaya	1995	76767
3.	Lalit Narayan Mithila University	1972	82533
4.	Magadh University	1962	49715
5.	T.M. Bhagalpur University	1960	59904
6.	Veer Kunwar Singh University	1994	68952

Source: Data for year of establishment is from (UGC, 2020) and student enrolments from (UGC, n.d.)

Table 2. Status of website of state universities of Bihar

State university	Web address	Status of website
Arybhatta Knowledge University	http://akubihar.ac.in/	Functional*
Babasaheb Bhimrao Ambedkar Bihar University	http://www.brabu.net/	Functional
Bhupender Narayan Mandal University	http://bnmu.ac.in/	Functional*
Bihar Agricultural University	http://bausabour.ac.in	Functional
Bihar Animal Sciences University	https://www.basu.org.in/	Functional#
Chanakya National Law University	http://www.cnlu.ac.in	Functional
Jai Prakash Vishwavidyalaya	http://jpv.bih.nic.in	Functional
Kameshwar Singh.Darbhang Sanskrit Vishwavidyalaya	https://www.ksdsu.edu.in/home.htm	Functional*
Lalit Narayan Mithila University	https://lnmu.ac.in/	Functional*
Magadh University	http://www.magadhuniversity.ac.in/	Functional
Maulana Mazharul Haque Arabic & Persian University	https://mmhapu.ac.in/	Functional*
Munger University	https://www.mungeruniversity.ac.in/	Functional#
Nalanda Open University	http://www.nalandaopenuniversity.com/	Functional
Patliputra University	http://www.ppup.ac.in/	Functional#
Patna University	http://www.patnauniversity.ac.in	Functional
Purnea University	https://purneauniversity.org/	Functional#
Rajendra Agricultural University	https://www.rpcu.ac.in/	Functional*
T.M. Bhagalpur University	http://tmbuniv.ac.in/	Functional*
Veer Kunwar Singh University	http://www.vksu-ara.org	Non-functional

Source: Data for list of state universities of Bihar and their websites from (UGC, n.d.). Website accessed on 17th September 2020 to check the status.

Web address is not furnished at (UGC, n.d.), and taken from Google search.

* Web address furnished at (UGC, n.d.) is non-functional and a functional web address is taken from Google search.

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