

Digital Transformation in the arena of Higher Education- Jammu & Kashmir

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ABSTRACT

The world is moving rapidly into the domain of online information, education and business. The role of digital technology in higher education is becoming more and more important for the growth and development of the country. Digital education is the integration of many communication technologies namely computers, network, software's, internet, mobile, storage, audio-visual systems, e-content etc. These enable users not only to access the information but also to store, transmit, and manipulate it as per their requirement. Digital technology is very useful tool for imparting easily accessible, affordable and quality education to all. The new teaching methodologies involve the use of e-content, audio-visual utilities, computers, presentations, many mobile apps to deliver lectures online and conduct online test and exam. The students using digital technology can access resources anytime and anywhere. The future of education methodology is Real Time Interactive education. Digital technology also enables access to the opinion of professionals, experts and researchers all over the world and allows one to be in direct communication with them. It is now possible to gain access to an unlimited amount of data and educational materials. Moreover, the Government has also taken many initiatives to implement online education in higher education. The aim of this study is to determine the status of digital transformation and initiatives Government to boost digital education in universities' and colleges of state of Jammu and Kashmir. For this purpose, the current data regarding digital infrastructure available in colleges and the grants released by Department of Higher education of the state have collected and were evaluated with the content analysis method. Findings indicate that there was poor digital infrastructure in Higher Educational institutions. Now the government of Jammu and Kashmir has taken concrete steps to boost digital transformation in the state.

Keywords: Accessibility; Digital; ICT; e-Content; Multimedia; Resources; Technology

I. INTRODUCTION

Technology is always developing and changes with time. The more it develops, the more our life is changed. The change has impact on our daily life and people around us including employers, organizations and teachers as well. The term digital technology includes computers, networks, internet, web servers, e-content, e-library etc. Digitalization of education means providing educational resources in electronic form and delivering them online. It also involves the use of resources and tools to create, organize, store, manage and communicate information among users. Various software, hardware, middleware, storage devices, internet along with human man power are the base of digital transformation. Online education has given birth to new business models for the universities and colleges whereas flipped classrooms, virtual reality sessions, labs, digital simulations and models, electronic documents, e-contents, online tests, wide and open resources give students an amazing educational experience. The benefits of low marginal

costs coupled with platform driven flexibility, adaptability and personalization make this model of learning a compelling proposition, not only for the online learners but also for the traditional classroom students. Digital transformation in higher education varies with the components such as the Internet, mobile networks and smart-phones, the Internet of Things, Big Data, new cloud services, smart accessories/garments, fast and high capacity connections, social media networks and artificial intelligence. The main purpose of digital transformation in higher education is to redesign educational services and to redevelop the operational processes of higher education.

As the number of student grow in school education and higher education, the need of some effective teaching tools was felt to provide effective teaching to the students. Teacher not only provides information but also teach how to handle and use digital tools and resources. With the steady growth in the field of technology, a gap has been created between the students and their ability to use technology. There is a strong need to educate the students with the latest technology. Digital technology helps in establishing an increasingly technologically orientated world. It is a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies— scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

II. BACKGROUND

The growth of e-governance(1) first began in 1977 with establishment of National Informatics Centre (NIC). In 1997, the Prasar Bharti collaboration with Indira Gandhi National Open University (IGNOU) started a DD Gyan Darshan1 channel(2), was the first exclusive telecast for schools, teacher enrichment education, open and distance learning, vocational courses and courses for disadvantaged sections of India. The motive was to implement and provide education through electronic media as per the facility of the learner. In 2004 GSAT-3, known as **EDUSAT** is meant for distant class room education from school level to higher education. This was the first dedicated "satellite dedicated exclusively for educational services. Further in 2006, the national level e-Governance programme called National e-Governance Plan (3) was initiated. There were 31 Mission Mode Projects under National e-Governance Plan covering a wide range of domains, like agriculture, land records, health, education, passports, police, etc. On 1st July 2015,

Digital India (4) was launched by the Prime Minister of India with the mission of creating digital infrastructure, connecting every institution with high-speed Internet networks and improving digital literacy in rural India. On 25 Feb. 2017, the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)(5) was being initiated under Digital India Programme. This initiative is expected to cover 6 crore households in rural areas with an intent to make them digitally literate. Ministry of Human Resource Development on July 9, 2017 launched the seventeen point action (6) plan on Digital initiatives for higher education. The National Convention was held at Vigyan Bhawan in New Delhi and Under this scheme MHRD instructed the state government institutions to start online courses, build digital library, create smart campus. It also includes the installation of **DTH SWAYAM Prabha**(8), a group of 32 DTH channels devoted to telecasting of high-quality educational programs on 24X7 basis using the GSAT-15 satellite for distance learning.

III. IMPORTANCE OF DIGITAL LEARNING IN HIGHER EDUCATION

In the current digital age, we cannot imagine education without using technology. The technology enabled tools makes the bridge between the education and current digital era. Today digital technology is indispensable to education. It helps in improving the quality and advancement in the field of education. The implications of implementing digital technology are:

It makes the learners more independent. The learners have facility to attend their lectures in the class room but they can also access the wide range of study material made available through digital enabled services.

It can enhance learning environment for learners. The technology enabled class room teaching supports the learner centred approach. The teacher acts as a facilitator not a leader. The use of ICT tools (e-content, ppt, audio, video, etc) inculcate the skills and interest in the learners. The higher order thinking and creativity can be facilitated by ICT through drill and live practice.

It provides multimedia tools for demonstrations to the students in a way which might not be possible with traditional methods.

The use of digital tools provides equal opportunity to all the students irrespective of their gender, region, language, location, etc. It makes available lectures from subject experts and course related study material to the students across the globe. This is not possible with the traditional teaching aids.

It allows teachers to integrate new technology into their teaching which is essential to enhance the quality and standard of education. Using the digital gadgets teachers can easily represent their lectures in a better and organized way. It requires the competency in handling ICT tools.

ICT supports the concepts of asynchronous learning i.e. learning by the time lag between delivery of lecture by subject experts and its reception by learners. Online

Sr. No	Name of the Colleg	District of the Colleg	No. of Class Room	No. of digit	Edusat	Digital Libra	WiFi Cam pus	Free DTH Educatio
1	GGM Sc	Jammu	21	4	√	X	√	X
2	GCW Udham pur	Udham pur	12	2	√	X	√	X
3	GDC Boys Kathua	Kathua	26	4	√	X	√	X
4	GDC Poonch	Poonch	16	3	√	X	X	X
5	GDC Bhadar wah	Bhadar wah	14	3	√	X	√	X
6	GDC Samba	Samba	6	0	X	X	√	X
7	GDC Ramba n	Ramba n	7	1	X	X	X	X
8	GDC Kishat war	Doda	8	3	√	X	X	X
9	GDC Nowsh era	Rajouri	9	1	X	X	√	X
10	GDC Reasi	Reasi	13	1	√	X	X	X

course materials, for example, may be accessed 24 hours a day, 7 days a week from anywhere at any time and by an unlimited number of people.

IV. DIGITAL TRANSFORMATION IN J&K HIGHER EDUCATION INSTITUTIONS

A study of about twenty colleges of Jammu division of J and K State was conducted regarding the availability of digital infrastructure in the Government Degree Colleges of the state running undergraduate courses. This survey is conducted by selecting at least one college from each district including the rural areas of the state. The source of collected data are the College websites and staff of the concerning college, official communications etc. The following

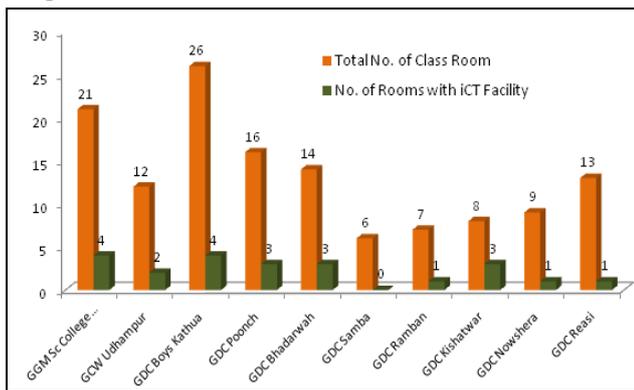
Table 1 shows the data regarding the digital infrastructure of ten colleges one from each district of Jammu Division. The analysis of data shows that only about 17% classrooms are digital equipped having facilities of smart class, EDUSAT, etc which is very low. Moreover there are some colleges in the state where ICT infrastructure is almost negligible.

Table-1 ↑

Table 1: Digital Infrastructure of Different colleges

The following bar chart in fig 2 shows the current status of ICT graphically i.e the number of total class rooms and the number of class rooms equipped with ICT infrastructure in of above mentioned colleges of Jammu Division.

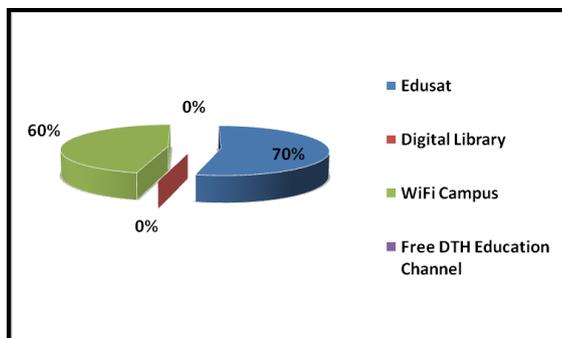
Fig-2



The study indicated that a lot more has to be done to create digital infrastructure to implement digital transformation in the colleges and impart education to meet the technology challenge. Moreover, if we talk about the type of the digital infrastructure available in the colleges, the study shows that only 17% class rooms are equipped with digital class room facilities.

As per the table study sample, EDUSAT facility is available in 70% colleges. The Wi-Fi connectivity is available in 60% colleges. It shows that not even a single library in state (according to the sample data) has been digitalized and institutions do not have free DTH channels for imparting ICT education. The following pie chart in fig-3 shows the percentage of type of infrastructure available in Jammu Division colleges (table study).

Fig-3



In the last few years state government is very serious about creating digital infrastructure and implementing it in the state colleges on priority basis. In the last year Department of higher education organized many workshops and Faculty Development programs to trained hundreds of teaching faculty for handling digital tools and developing e-contents and implements it in the class room teaching.

In current financial year 2020-21, the Department of Higher Education of the state vide order no.: HE/Plan/637/2020 Dated 14/1/2021 released Rs 7033 lac for up-gradation and procurement of digital infrastructure like setting up of browsing center, conversion of traditional class room into digital class rooms, digital studio for developing e-content, installing high speed broadband, developing e-content etc. for state colleges. The aim of above scheme is to convert hundred percent traditional class room into digital class room and providing technology oriented education to students.

V. CHALLENGES

Digital education plays very important role in higher education in present digital era. It has become the backbone of whole education system worldwide. It has become a powerful tool to impart quality and skill based education. The analysis of above data of higher education institutions and study of various researchers indicate that the implementation of digital technology in the advancement of higher education is facing the following challenges.

VI. INSUFFICIENT INFRASTRUCTURE

The study indicated that there is no proper digital infrastructure in the institutions for imparting quality and technology oriented education. It is not only due to non availability of required hardware software but also due to lack of digital resources like e-library, in appropriate software etc.

VII. POOR INTERNET CONNECTIVITY

Digital education requires strong high speed secure internet connectivity for implementation and proper functioning. The research shows that many institutions lack proper net connectivity, some institutions have poor or unstable net connectivity.. In our state about sixty percent college campus are WIFI connected. Many institutions suffer due to lack of broadband connectivity.

VIII. LACK OF GOVERNMENT POLICY

The Government has taken many initiatives and policies for digital transformation at University and College level. But still many institutions lack digital infrastructure, network connectivity, competent teacher's particular in rural areas.

IX. DIGITAL ILLITERACY

The computer literacy rate in India is around 15%. Computer illiteracy is a retarding factor in adoption of digital education in India. Lack of knowledge about digital resources and communication technology is another factor that hinders the implementation of ICT in Education.

X. SOCIAL CHALLENGE

Other factors responsible for slow implementation of digital education in India are social and cultural factors. These factors include poverty, low rate of literacy, different levels or different languages of primary education, poor public service etc. Most of the digital contents are available in English and basic education of most of the students is in regional languages.

XI. CONCLUSION

The digital transformation in higher education has not only improved quality of teaching and learning but also increased the accessibility of information. Moreover, it also leads to the promotion of distance mode of learning. One of the objectives of the present paper is to provide better understanding of digital tools and its role in teaching and learning system. The adoption and use of digitalization in education has shown a positive impact on teaching, learning, and research. The paper has discussed the present scenario of digital infrastructure in higher education system and challenges faced in implementing digital education in class rooms of the colleges of the state. The data collected from different colleges have showed that the digital infrastructure in the state is not in a very good condition but now the state government has released sufficient grant to create digital infrastructure in the colleges. By overcoming the certain challenges involved in the process of digital transformation, the whole education system can be revamped to digital and quality oriented education system. This paper strongly recommends the creation and extensive usage of digital tools and contents in the class rooms, organizing teacher training programs, installing high speed internet, etc. Apart from this, the Government and higher education institutions need to develop strategies for effective implementation, maintenance and monitoring of digital technology in education to improve quality, accessibility and advancement of education system.

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