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Role of ICT in Transformation of Education System in India

Dr.Atika khatoon*

* Assistant Professor in Economic department
Karamat Husain Muslim Girls P.G. College , Lucknow

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ABSTRACT

The world is changing constantly and the various domains are also influenced by the change. Education is no exception to that. Education transform from paper pen to notepad and physical to virtual. The global crisis of the COVID-19 virus has impacted the Education Sector tremendously. As per the pandemic situation, there is uncertainty about when schools and colleges would reopen. It has forced the sector to shift to virtual and blended mode of learning. Information and Communication Technology (ICT) has helped the sector to survive and adapt to the new ways of online learning. Whole world s education institute are figuring out various ways to support students and teachers with innovative platform. There has been huge rise in adopting worldwide use of online tools like Zoom, Google Meet, Google Classroom and Blackboard, Mobile, Television and Radio etc. as a method to continue the learning process during pandemic. India has been also initiative various national and state level platforms like Diksha, NROER (National Repository of Open Educational Resources) WhatsApp Television, Radio etc to continue the learning process.

In the meantime, New Education Policy 2020 recognizes the *importance* of technology. India has transformed itself into an information intensive society and there is a growing requirement to embrace the usage of technology in the field of education. In this regard, the Policy notes that one of the central principles steering the education system will be the *extensive use of technology in teaching and learning, removing language barriers, increasing access as well as education planning and management* . The chapter focus the wide components of ICT in teaching learning process.

Key word: ICT, NEW2020 and Teaching Learning

Introduction:

Information and Communication Technologies are playing very important role in transforming the teaching mode. Covid- 19 pandemic has forced the education sector to shift dramatically to virtual and blended modes of teaching and learning using various ICT tools like zoom, google meet, google classroom and blackboard, mobile, television and radio etc. India has been response initiative various national and state level platforms like Diksha. NROER (National Repository of open educational Resources, WhatsApp, television and radio etc to continue the learning process during worldwide lockdown. ICT has radically accelerated the urgency of various online platform to adapt new pedagogical methods learn and teach. Relationship between technology and education at all levels is bi- directional. ICT can be considered as a subfield of Educational Technology, as such technologies are used for enlightening purposes, namely to support and improve the learning of students and to develop learning environments. ICTs in education are being used for developing course material; delivering content and sharing content; communication between learners, teachers and the outside world; creation and delivery of presentation and lectures; academic research; administrative support, student enrolment etc.

NEP 2020 is the first omnibus policy after 1986 which welcomes the importance of ICT in education. According to NEP 2020, an autonomous body, the National Educational Technology Forum (NETF) are going to be created to supply a platform for the free exchange of ideas on the utilization of technology to reinforce learning, assessment, planning, administration, and so on.

Evaluation of ICT in teaching and learning.

ICT came existence with the development of computer which was seen as a major innovation in the field of scientific research and technology. There has been tremendous increase in ICT in education.

A few decades ago, technological devices like radio, television, film strips, OHP, audio and video cassettes were used to make teaching effective and enhance learning. But now a days, teaching and learning has been

enhanced by a vast array of ICT based technologies in the form of interactive radio, teleconferencing, web based and satellite-based services. ICT provides opportunities to access an abundance of information using multiple information resources and viewing information from multiple perspectives, thus fostering the authenticity of learning environments.

UNESCO has defined ICT as forms of technology that are used to transmit, process, store, create, display, share or exchange information by electronic means. It includes not only conventional technologies such as radio and television, but also modern technologies such as cell phones, Internet and Intranet, hardware and software, satellite systems, expert systems, teleconferences, etc., as well as the various services and associated applications. This chapter focuses on integration of ICTs in educational system in India and highlights on present educational scenario.

Objective:

1. To analyses the innovative approach the reaching
2. To examine the ICT in higher education

Innovative approaches to teaching

Digital India launched on July 1,2015 by Hon Prime Minister Sri Narendra Modi with the vision to transform India into a digitally empowered. DIKSHA is the one nation; one digital platform to access all over the states. It provides to access a large number of curriculums linked e-content, courses for teachers and students and Digital devices (laptop/ mobile/ desktop/ tablets, TV and radio) in order to have coherence of access and learning experience. DIKSHA platform has been proved as a revolutionary step ahead in the direction of digital India vision. It has helped a large number of learners. A massive number of students and teachers from all over the country have been using this platform to continue their learning since the time schools were closed. It has been the most popular application in school education during a pandemic. Swayam Prabha DTH channels are meant to support and reach those who do not have access to the internet. 32 channels are devoted to telecast high quality educational programmes by the MHRD. The Department of School Education and Literacy also tied up with private DTH operators like Tata Sky & Airtel to air educational video content to enhance the reach of these channels. Students can access the web version at http:// swayamGov.in. Swayam portal is accredited by: AICTE, IGNOU, NCERT, UGC, NIOS, NITTR, IIMB

e-PG Pathshala is an online portal for postgraduate courses. Under this initiative, over 700 e-books in over 68 postgraduate courses will be available for free for students.

e-Adhyayan consists of a e-books and video contents. e-Pathya offers offline and distance-learning courses for postgraduate students. MOOC (Massive Open Online Courses) UGC courses offered under the SWAYAM portal.

The National Digital Library (NDLI) is a virtual repository of learning resources through a single- window of academic contents in multiple disciplines. It is an all-purpose platform designed for students of all ages, teachers, learners, researchers, librarians, professionals, and other users.

e-ShodhSindhu is a digital library providing access to e-resources like journals, eBooks, factual, bibliographies, citations, etc. for higher education. All academic institutions like central and state universities and colleges can avail of the services on **https://ess.inflibnet.ac.in/oes**.

National Programme on Technology Enhanced Learning (NPTEL) is another project funded by the Government of India and Ministry of Education. It was a collective initiative taken by the Institute of Science.The online repository offers various courses in engineering, science, social sciences, and humanities. There are no course fees, you can visit the online web portal at **http://nptel.ac.in**.

Virtual Labs is a digital consortium founded by the Government of India in association with the Ministry of Education under the NME-ICT initiation. eLearning is expanding its horizon and provides a unique opportunity for students, teachers, researchers, and knowledge aspirants to collaborate and share their knowledge and learning resources under a common platform.

The global crisis of the COVID-19 virus has impacted the Education Sector tremendously. Corona virus pandemic has a lot of dark side. Around the world, people get ill and die, school close, health system is overloaded and internationallyeconomically collopsation was seen. It has affected all segments of the population and continues to do so. Almost every country has imposed complete or partial lockdowns to combat the spread of the

virus. The education sector is no exception has been affected tremendously by such lockdowns. According to World Bank data, 190 countries have faced complete or partial school closure, affecting more than 1.7 billion students2. India also began closing down schools and colleges temporarily during the second week of March. As per the present situation, there is still uncertainty about when schools and colleges will reopen. The Indian Education system has also experienced an irreversible learning crisis amid the pandemic. School closure across the country has impacted everyone s learning experience. The pandemic has forced the sector to shift to a virtual and blended mode of learning. Information and Communication Technology (ICT) has helped the sector to survive and adapt to the new ways of online learning. The crisis has allowed various educational innovations to bloom. During the pandemic, the country has witnessed a number of ICT driven initiatives on national, state, and individual levels. There has been a proactive approach in the education sector to utilize the maximum potential of technology to reach every learner. Students and teachers are now relying on various online platforms to adopt new pedagogical methods to learn. Online learning apps and platforms for learning from home have been making it possible to continue the learning process in the safest possible manner.

In sight of ICT, education can be classified in three main categories:

1. E-learning
2. Blended Learning, and
3. Distance Learning

1. E-Learning: -learning can be defined as learning without using paper instructional material and the use of technology to teach. Therefore, it is seen as opposite of traditional teaching or face to face teaching. Several terms are used to cover e-learning such as online learning, virtual learning, network, and web-based learning. E-learning allows higher participation and greater communication. It challenges

concept that face-to-face conventional education is superior to it (Bhattacharya and Sharma, 2007). The core ICTs are web and Internet which spread knowledge through e-learning.

The components comprise e-portfolios, cyber infrastructures, digital libraries and online learning object repositories. All the above components create a digital personality of the student and unite all the stakeholders in the education.

Some of the advantages of e-learning are:

- Efficiency: offers teachers an efficient way to deliver lessons to students
- ***Accessibility of Time and Place:*** *it allows students to attend classes from any location of their choice and to access the learning material at a time of their comfort.*
- ***Affordability:*** *Online education is far more affordable as compared to physical learning. This is because online learning eliminates the cost points of student transportation, student meals. Additionally, all the course or study materials are available online.*

2. *Blended Learning: The evolution of the digital learning platforms has a huge impact in educational institutions and has eventually put the traditional methods in the back seat. A blended learning mode provides ultimate flexibility in many aspects. It* ***is a mode of study which encompasses both online and face to face learning.*** *BL is an effective blend of online and face-to-face mode in teaching-learning. The BL Implementation notification of UGC states the BL mode could be used for all the courses except of SWAYAM courses which are purely in online modes.*

The National Education Policy has given a rare glimpse in what can be achieved through the transformation of education. The new NEP clearly states that it is time to take on a policy that is undoubtedly student centric, or what can be safely put down as Education. new policy gives the acceptability of manymodes of learning including that of face to face learning, online learning and distance orvirtual mode. It also promotes use of vocational courses, multi-disciplinary courses andmulti-modal approaches there by focusing on Blended teaching-learning.

Approaches likely to be used in BL are as follows:

- Face-to-face Video Lectures Shared to the students for the entire course (Pen Drive / CD) - e-textbook experience but not dependent on broadband.
- Internet Based Learning (IBL) Internet based projects (search & learn) to promote self-learning.
- Project Based Learning integrating multiple peer group for the project, students to

collaboratively generate ideas.

- TAB based remote learning / remote examination & evaluation / touch screens and digital pens appeal to tactile learners / portable learning.
- Satellite based TV Channel mass learning / adult education / farmer education.
- Online Assessments Quiz, Assignments, Test, Examinations at regular intervals to measure learning outcome.

The important features of Blended Learning environment are:

- Increased student engagement in learning.
- Enhanced teacher and student interaction.
- Responsibility for learning.
- Time management and flexibility
- Improved student learning outcomes
- Enhanced institutional reputation.
- More flexible teaching and learning environment
- More amenable for self and continuous learning
- Better opportunities for experiential learning

The advantages of BL for students include increased learning skills, greater access to information, improved satisfaction and learning outcomes, and opportunities both to learn with others and to teach others.

- **Distance learning**

Distance learning is a method of study where teachers and students do not meet in a classroom but use the Internet, e-mail, mail, etc., to have classes. Simply put, distance learning is when students are separated from teachers and peers. This means that students learn remotely and do not have face-to-face learning with instructors or other students. Most distance learning programs comprise a computer-based training (CBT) system and communications tools to produce a fundamental classroom. Because the Internet and World Wide Web are available from close to all computer platforms, they serve as the foundation for many distance learning systems.

Types of distance education courses:

- Correspondence conducted through regular mail.
- Internet conducted either synchronously or asynchronously.
- Tele-course-Broadcast where content is delivered via radio or television.
- CD-ROM where the student interacts with computer content stored on a CD-ROM.
- Pocket-PC/Mobile Learning where that student accesses course content stored on a mobile device or through a wireless server.

Methods

- In distance education student don t need to present in a classroom in distance learning use all forms of technology, and that include radio, TV, audio video conferencing, on line learning.
- There are different between open learning and distance learning. Distance learning is methodology used when student and teacher are separated by time and place.

There are some advantages of distance education learning.

- Career advancement and hobbies. Studying online gives you more flexibility.
- Flexible schedule and environment.
- Lower costs and debts.
- Self-discipline and responsibility.
- More choice of course topics.

Challenges of ICT in higher education The challenges related to the accessibility of new technologies for teachers are widespread and differ from country to country,

- It may create a digital divide within class on bases of digital performance as students who are more familiar with ICT will more benefits and learn faster than those who are not as technology savvy.
- It can affect the bonding process between the teacher and the student as ICT becomes a communication tool rather than face to face conversation.
- since all teachers are not experts with ICT.
- Plagiarism is high as student can copy information rather than learning and developing their own skills.
- The cost of hardware and software can be very high
- Limited accessibility and network connection and school with limited technical support and Lack of effective training for both students and teachers, it is main barrier to for teacher in using ICTs in a classroom environment, Similarly, Beggs (2000) found that one of the top three barriers to teachers use of ICT in teaching. It was the lack of training.

Conclusion:

Information and Communication Technologies are playing very crucial role in transforming the teaching and learning method. Learning methods which were earlier conventional or traditional are now online and practical. New Education Policy 2020 recognizes the *importance* of technology. India has also transformed itself into an information intensive society . In the online education process, it has not only improvised classroom teaching learning process, but also the students and teachers are well equipped with the knowledge of ICT tools and e-learning process. It s been proven to be a successful method of learning and offers a number of different benefits when compared with traditional education. While it is beneficial and it provides a high-quality learning opportunity, improves student outcomes and skills and expands educational choice options. Therefore, location, time, and quality are no longer considered factors in seeking degree courses or higher education because of online education.

References:

1.Agnew PW, Kellerman AS, Meyer J. (1996)Multimedia in the Classroom, Boston: Allyn and Bacon.

2.Beaver, J. K., Hallar, B., & Westmaas, L. (2014). Blended learning: Defining models and examining conditions to support implementation.

3. Beggs, T. A. (2000). Influences and barriers to the adoption of instructional technology. Paper presented at the Proceedings of the Mid-South Instructional Technology Conference, Murfreesboro, TN.

4. Bloom, B. S., and D. R. Krathwohl. (1956). Taxonomy of Educational Objectives: Handbook 1

5. Bhattacharya I, Sharma K. (2007) India in the knowledge economy – an electronic paradigm, International Journal of Educational Management. 21(6):543-568.

6. Chandra S, Patkar V. (2007) ICTS: A catalyst for enriching the learning process and library services in India', The International Information & Library Review. 39(1):1-11

7. Cleveland-Innes, M., & Wilton, D. (2018). Guide to blended learning http://oasis.col.org/bitstream/handle/11599/3095/2018_Cleveland-Innes-Wilton_Guide-to-Blended-Learning.pdf? Sequence=1&isAllowed=y

8. Lim, C. P., Wang, T., & Graham, C. (2019). Driving, sustaining and scaling up blended learning practices in higher education institutions: A proposed framework. Innovation and Education, 1(1), 1-12.

9. Holmberg, B. (1995) Theory and Practice of Distance Education,

10.https://www.hindustantimes.com/education/new-education-policy-2020-live-updates-important-takeaways/story-yYm1QaeNyFW4uTTU3g9bJO.html

Partridge, H., Ponting, D., &McCay, M. (2011). Good practice report: Blended learning. http://eprints.qut.edu.au/47566/1/47566.pdf

11. National Education Policy (NEP) - 2020

12. Priya Pallavi, Dr. Niva Bara, Dr. BK Jha and Pankaj kumar ((Special Issue- 4) International Conference on Food Security and Sustainable Agriculture (Thailand on 21-24 December, 2018) Role of ICT in education system in India. E-ISSN: 2278-4136.

13. UNESCO. Open and Distance Learning Trends, Policy and Strategy Considerations, UNESCO, 2002

14. UNESCO. ICTs for Higher Education Background Paper Commonwealth of Learning, Paris, UNESCO, 2009.