



The Role and Impact of ICT in Improving Educational Quality in the Context of NEP-2020: A Brief Overview

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Abstract

'Information and Communication Technology' also known as ICT (in short form) is a crucial tool in the education sector; enhancing access, relevance, and quality. It simplifies teaching and learning, fosters an encouraging learning environment, and helps learners develop confidence and innovative thinking. However, ICT also presents challenges for quality education. This study explores the positive benefits of ICT in education, focusing on its incorporation into the teaching and learning process. The connection between technology and education is bi-directional, with education playing a vital role in transforming the nation as a digitally empowered. The 'National Educational Technology Forum' (NETF) is set up to facilitate discussions on using technology for 'learning,' 'assessment,' 'planning,' 'administration,' and other 'elements in higher education.' The NEP-2020 aims to meet SDG-4 by focusing on using ICT for quality education. The study highlights the positive impact of ICT on education and the necessity of a free-flowing forum for discussions on how to use technology in higher education.

Keywords: *ICT, Implications of ICT, features of ICT, process of teaching and learning, NEP-2020*

Introduction

For the purposes of this primer, ICT, or information and communication technologies, are defined as a "diverse collection technical tools and resources used to communicate, as well as to generate, distribute, store, and upkeep Details. The definition of information and communication presented by the "United Nations Development Program" (UNDP) Technologies: "In essence, ICTs are instruments for processing information; they encompass an extensiveness of products, services, and functions that are very utilized for information production, storing, processing, distribution, and interchange. The advancement of information

technology is critical to quality education because it may enhance fundamental abilities, increase teacher training in technology, and motivate students more.

When information and communication technology is utilized appropriately, it may be a tool for curriculum and subject reform. Establish a learner-centered environment. Technologies for information and communication is being used by the Teachers should encourage students to get aware with and adopt this novel method. Data and Interactions Technologies (ICTs) are becoming a more and more essential component of the educational process. It has altered numerous Facets of the individuals' life. These modifications have forced educational establishments, administrators, and instructors to reconsider their duties, instruction, and future goals. ICT has seen the most recent hurdles to learners' access to high-quality education. In order to provide universal access to high-quality education, NEP-2020 Recommended maximizing digital platform like NPTEL, DIKSHA, open distance learning (ODL) etc. ICTs could potentially used to improve access, relevance, and quality of education in countries that are developing, according to Tinio (2002). ICTs significantly speed up the process of gaining and assimilating knowledge, providing developing nations with previously unheard-of chances to improve policymaking and execution, educational institutions, and enhance the range of chances available to the underprivileged and business. Among the worst things the impoverished have to deal with, and by many others who feel alone since they reside in the poorest nations, and ICTs can provide access to information in ways that were previously unthinkable.

Objectives of ICT for quality Education

1. Learning Enhancement of children.
2. An acquiring of information and skills necessary for sustainable growth and better living.
3. To provide the support and encourage the interaction between learners and exist atmosphere.
4. To promote student for self-learning and educational adjustment.
5. To encourage margin section of society for gaining education via ODL mode.
6. To encourage citizens to be technologically literate and to value both brilliant and slow learners equally
7. To provide quality Education (SDG-4) for universalization of education. (RTE-2009)

National Education Policy (NEP)- 2020

Achieving one's full potential, creating a just and equitable society, and achieving national progress all require education. India's sustained rise and leadership in terms of financial growth on the international scene depend on the access of high-quality education. National integration, technological advancement, social fairness and equality, and cultural preservation.

For the future, global reachable to high-quality education is an effective planning for extra advancement and optimization of our abundant resources and abilities of the country for the benefit of each person, society, the nation, and the globe. Over the next decade, India will have the largest number of young people worldwide, and

The upcoming time of our capacity to offer kids top-notch educational options will influence our nation. As part of the 2030 goal for SDG (Sustainable Development Goal), which India endorsed in 2015, the global educational growth goal is represented in Goal 4 (SDG4), which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. Like as ambitious objective will need the overall educational process should be reorganized to encourage and facilitate learning, ensuring that all the necessary.

It is possible to meet the 2030- An Agenda for 'Sustainable Development's objectives' and 'goals' (SDG-4). The goal of this NEP-2020 (National Education Policy, 2020), which is the pioneer and 1st education policy of the twenty-first century, is to meet the nation's numerous and expanding developmental imperatives. This Policy suggests updating and changing every facet of the educational system, including its rules and Governance, with the goal to create an innovative process that is consistent with the enormous goals of *Twenty First Century* building on India's customs and value inculcation in education system, particularly SDG 4. This NEP-2020 aims to create an Indian-ethos-based educational system that directly contributes to the sustainable transformation of India, or Bharat, into a just and dynamic knowledge society by offering top-notch education to all, therefore elevating India to the status of a worldwide knowledge hub. Super power. The Policy suggest that our institutions' curricula and pedagogy must cultivate a strong feeling of respect for the Fundamental Duties and Constitutional principles, patriotism, and an understanding of one's responsibilities and accountabilities in a world that is constantly changing

Information and Communication Technology (ICT)

ICT is a combination of computers, software, and telecommunications that simplifies information gathering, storage, retrieval, and sharing. It is crucial in various industries like business, education, healthcare, and government. ICT has revolutionized communication, allowed instantaneous communication, and eliminated geographical boundaries. It uses resources like social media, mobile devices, and the internet to facilitate creativity, teamwork, and streamline procedures. ICT is not just a technological achievement but also a key factor in the digital age's economic and social development. It increases productivity, expands access to knowledge, and encourages inclusive engagement in a rapidly changing world. ICT is a catalyst that supports people and communities navigate the intricacies of contemporary society.

Major ICT Initiatives in India

UGC-INFONET: The University Grant Commission (UGC) founded UGC-INFONET at the close of 2004. All scholarly materials and literature accessible online may be accessed electronically through UGCINFONET. The Director of the "Information and Library Network" (INFLIBNET) Center in Ahmedabad carried out the program. This program's members are the institutions and universities that are linked or associated with UGC or another agency.

BRIHASPATI: This is an online education system. IIT Kanpur produced it as open-source freeware. Instructors are efficient to upload their study materials, lecture notes, and handouts in e-format to the internet.

EDUSAT: It was launched with the collaboration between the 'Indian Space Research Organization' (ISRO) and Ministry of Education (MoE). This project was aimed to bring the interaction to enhance the education and develop an effective online and distance education system in the nation.

SAKSHAT: SAKSHAT is an educational portal under MHRD which provides links to resources which are available on the websites. It addresses all the educational concerned needs of teachers, students, researchers, and learners. The content was created by NCERT, AICTE, CBSE, IITs, NITs, UGC, IGNOU, IISc and KVS etc.

e-SIKSHAK: CDAC, a 'Scientific Society of the Ministry of Communications and Information Technology,' GOI, launched e-SIKSHAK, an e-learning framework. You can access free Telugu courses using this platform.

e-YANTRA: Funded by the MHRD under the National Mission on an ICT-based education program designed to produce the next wave of embedded systems engineers with a pragmatic approach to aid in offering workable answers to certain issues encountered in daily life.

OSCAR++: The Open-Source Courseware Animations Repository, or OSCAR, seeks to create a sizable collection of interactive, web-based simulations and animations, or "learning objects," to aid in the teaching-learning process of scientific topics. These kinds of systems are helpful for solo study, distant learning, and classroom instruction.

FOSSEE: The 'National Mission on Education' includes 'Free and Open-Source Software' in Education, or FOSSEE. Ministry of Education's ICT Ministry of Education (MoE), the Indian government. The initiative seeks to encourage the use of FOSS technologies to raise the quality of Education.

e-KALPA or D'Source: As part of the 'National Mission in Education' via ICT, the Ministry of Education, Government of India, has supported this initiative. Aim of the project is to "create a digital learning environment for design," which entails constructing learning environments. It will grant access to the learning of essential design-related information, skills, and abilities.

Virtual Learning Environment (VLE): VLE is an electronic resource platform that functions as an online resource among a number of undergraduate and graduate courses offered. It is an Institute of Life-Long project. The University of Delhi's Learning was established in 2012.

The Role and Impact of ICT in Improving Educational Quality: in the Context of NEP-2020

The focus of conventional education has been on content. Courses have been designed mostly around textbooks for a long time. Lectures and presentations have been used by teachers, combined with learning exercises and tutorials aimed at reinforcing and practicing the material. Modern environments are currently favoring educational programs that enhance performance and proficiency. The role of Information and Communication Technology in Improving educational quality is following.

Pilot Studies for Online Education: To assess the advantages of combining in-person and online learning, relevant organizations such as IGNOU, NETF, NIOS, NITs, CIET, IITs etc. would be chosen to carry out several pilot studies.

Digital Infrastructure: With the speed at which technology is developing, this will prevent technology-based solutions from becoming old.

Online Teaching-Learning Platform with Tools: Teachers will be used and provided with an organized, user-friendly, and comprehensive collection of assistive tools and techniques to monitor students' progress through the extension of relevant, currently-existing e-learning platforms like SWAYAM and DIKSHA.

Content Creation: A digital content repository encompassing computer games, augmented reality, learning games & simulations, and coursework will be created. Students will access to a dependable fallback method for distributing e-content.

Bridging among Digital Divide: A particular emphasis on material in Indian languages shall be necessary; digital content must, to the greatest extent feasible, reach educators and learners in the medium of instruction.

(f) Virtual Laboratories: Provide equitable access to high-quality, hands-on, practical experiment-based learning experiences, virtual laboratories will be created using already-existing e-learning platforms like DIKSHA, SWAYAM, and SWAYAMPBHA.

Incentives and training for learners: Learners will receive in-depth instruction in 'learner-

centric pedagogy' and will use 'online teaching platforms and tools' to develop become superior bloggers.

Online testing and assessments: The National Testing Authority (NTA), school boards, PARAKH, the National Assessment Centre, and other relevant organizations shall create and administer the assessment frameworks. In addition, they will create the necessary skills, rubrics, portfolios, standardized tests, and assessment analytics.

Blended learning models: The value of in-person, face-to-face instruction is fully acknowledged when integrating digital learning into the classroom. As a result, several successful blended learning models will be found and appropriately replicated across a range of subject areas.

Importance of ICT in Education

Change is the universal law of nature (Alfred Tennyson) While material has always been the focus of education, modern environments increasingly favor curricula that foster competency and improved performance, which are strongly supported and promoted by developing instructional systems (Stephenson, 2001). The performance of students is rising because of the increased usage of Information and Communication Technologies in daily life. ICT is assisting in the shift away from content-centered courses in the way that students are learning. NEP-2020 also places increasing emphasis on the use of ICT in education to improve student learning for acquiring knowledge. It fosters cooperative learning and raises the standard of education. ICT makes it possible to provide students with timely and accurate feedback (Becta, 2003).

It encourages in-depth learning and enables teachers to better meet the various requirements of various students (Lau & Sim, 2008). This initiate accelerated learning and permits efficient diagramming of the learning route. (Newhouse P., 2002) claims that ICT-supported learning settings could be advantageous to a constructivist method of instruction. One of the main benefits of ICT use in education strategy has been to get students ready for the workplace, where ICTs will play a major role. The internet, computers, and other associated technology are spreading across society. These tech-savvy and pupils who are digitally literate have the necessary skills to use ICTs efficiently. In accordance with SDG-4 and NEP-2020, we can realize the vision of high-quality education.

Conclusion

Advancements in ICT are making national borders meaningless, making education a crucial service for international trade. The government can save money by incorporating ICTs in modern education, which can improve educational standards and quality. However, the lack of resources in the educational field, impeding the use of 'ICT' in poor countries. Obstacles include the availability of resources, lack of expertise in using ICT equipment, language barriers, financial constraints, and lack of training.

To overcome these obstacles, raise awareness on ICT education, develop guidelines for knowledge and skills availability, boost community involvement for ICT application self-sustainability, and create supporting infrastructural resources like internet access and power. The government should take initiative to support contemporary education and support educators and institutions in becoming more cutting-edge and dynamic. ICT adoption will ultimately helpful to provide the educational opportunities for students and aid their successful careers in today's technologically advanced environment.

Suggestions

1. The school strategic plans and, more importantly, the teaching plan for each year should incorporate the idea of ICT as a tool that may support ongoing educational innovation in the centers.
2. Academic institutions have to have state-of-the-art computer labs and other suitable facilities.
3. A key decision-making role in deciding what to teach and how to teach it (and what the students need to be trained in the usage of ICT as they will be utilizing it for learning.
4. For an ICT-friendly environment, NEP-2020 must be put into practice.

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Online Resources

- <https://sdgs.un.org/goals>
- https://www.education.gov.in/sites/upload_files/mhrd/files/upload_document/NETF.pdf
- <https://www.undp.org>
- <https://popp.undp.org/information-and-communications-technology>
- <https://www.meity.gov.in/>
- <https://www.education.gov.in/about-moe>
- <https://www.ugc.gov.in/>
- <http://yojana.gov.in/>
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