Digitalization of Education – From the Perspective of NEP 2020

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Abstract: This research paper examines the digitalization of education from the perspective of the NEP 2020 and provides an in-depth analysis of the policy and its impact on the education landscape. It explores the paradigm shift towards technology-based learning methods, the integration of artificial intelligence and online platforms into pedagogical practices, and the changing role of educators in the current digital age. In addition, the paper assesses the challenges and opportunities of this change, including issues related to accessibility, equity and 21st century skills development. Taking an in-depth look at the NEP 2020 program and its implications, this research paper provides valuable insights into the dynamic and evolving world of education in the digital age.

Keywords: *Digitalization, Indian Education System, NEP 2020, Challenges.*

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I. INTRODUCTION

In the 21st century, all societies have been transformed into information intensive societies as a result of advances in science and technology. Digitalization has impacted every domain, and education is no exception. These days, modern digital technologies and solutions are widely used in the education sector. This transformation is driven by technological advancements and the recognition of the importance of preparing students for the digital age.

The significance of technology in education has also been highlighted by the National Education Policy 2020 (NEP 2020), which has encouraged educational institutions to go digital in order to raise standards and quality. Use of Digital technology is a crucial part of the NEP 2020 initiative, which aims to modernize and improve India's educational system.

II. DIGITALIZATION OF EDUCATION

Digitalization of education refers to the integration of modern technologies and solutions into educational processes in order to improve teaching and learning . Digitalization in education plays an important role in providing equal opportunities and top-quality education to learners worldwide. The COVID-19 pandemic made clear how human resources and technology must collaborate to transform educational paradigms and develop inclusive and open learning systems.

The digitalization of Indian education refers to the comprehensive process of integrating digital technology into all aspects of the education system in India. This transformation encompasses various elements:

- **Online Learning:** The shift from traditional classrooms to digital platforms for delivering educational content and conducting classes, often through the internet.
- **e-learning:** The use of electronic resources, digital textbooks, and educational software to facilitate learning, often on computers or mobile devices.
- **EdTech:** The adoption of educational technology and software applications that aid in teaching, learning, and administrative tasks in schools and universities.
- **Digital Assessments:** Conducting tests and evaluations through online platforms, which can include automated grading and feedback.
- **Virtual Laboratories**: Simulated digital labs that enable students to conduct experiments and explore scientific concepts without the need for physical equipment.
- **Blended Learning:** Combining online learning with traditional face-to-face instruction, offering flexibility and personalized learning experiences.
- **Teacher Training:** Preparing educators to effectively use technology in their teaching methods and classrooms.
- **Administrative Efficiency:** The use of digital systems for managing student records, admissions, and other administrative tasks in educational institutions.

- **Research and Collaboration:** Encouraging research and collaboration among students and educators through digital tools and online platforms.
- **Government Initiatives:** Implementation of policies and programs by the government to promote digital education, such as Digital India and SWAYAM.

➢ *National Education Policy 2020*

New Education policy the most important education policy of the 21st century. The draft of NEP was submitted in 2019 and then approved by the Union Cabinet of India on 29 July 2020. The policy focuses on all perspective of Indian education and addressed various forms of education including early childhood education, school education, higher education, professional and technical education. It gives emphasis on revising and revamping the structure of education including its governance and regulation.

National Education Policy 2020 acknowledges the importance of technology. The policy proposes that to meet the present and future challenges in providing high quality education to all, the current digital platforms and ongoing must be enhanced and expanded.

➢ *Digitalization of Education under NEP 2020*

NEP 2020 has focused on the importance of technology in education. In part 3rd the policy gives emphasis on use of technology and recognizes the importance of online and digital education.

NEP 2020 uses a 5+3+3+4 structure rather than the traditional 10+2 approach. This creates a lot of opportunities because students will be exposed to digital media throughout the all four stages.

Here are some key initiatives under NEP 2020 for Digitalization in Education-

- **Pilot studies for Online Education:** National Educational Technology Forum (NETF), Indira Gandhi National Open University (IGNOU), Central Institute of Educational Technology (CIET), National Institute of Technology's (NITs), National Institute of Open Schooling (NIOS), Indian Institute of Technology's (IITs), and other appropriate organizations will be chosen to carry out a number of pilot studies concurrently in order to assess the advantages of combining online and traditional classroom instruction and also to study related areas, such as, student device addiction, most preferred formats of e-content, etc. Results from these pilot studies will be shared with the public and used for continuous improvement.
- **Digital Infrastructure:** To address India's size, diversity, complexity, and device penetration, investments must be made in the development of open, interoperable, evolving, public digital infrastructure in the education sector that can be utilized by numerous platforms. This will ensure that the technology-based solutions remain relevant with the rapid advancements in technology.
- **Online Teaching Platform and Tools:** Appropriate current e-learning platforms, like Digital Infrastructure

for Knowledge Sharing (DIKSHA) and Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM), will be expanded to give teachers a rich, organized, and easy-to-use set of assistive tools for tracking students' progress.

- **Content Creation, Digital Repository and Dissemination:** A digital repository of Content that includes the creation of coursework, Augmented Reality and Virtual Reality, Learning Games & Simulations will be developed. To facilitate fun-based learning, student-appropriate tools such as apps and gamification of Indian art and culture will be developed, in multiple languages with clear operating instructions.
- **Addressing the Digital Divide:** A significant portion of the population still has very limited access to digital media so the current mass media, such as television and radio will be widely used for broadcasts and telecast. To meet the diverse needs of the students these educational programs will be made available 24/7 in variety of languages.
- **Virtual Labs:** Existing e-learning platforms such as DIKSHA, SWAYAM and SWAYAMPRABHA will be used to build virtual labs, ensuring that every student has equitable access to high-quality hands-on, practical, experiment-based learning opportunities.
- **Training and Incentives for Teachers:** Teachers will receive in-depth instruction in learner-centric pedagogy and how to use online teaching platforms and tools to create excellent online material. The teacher's responsibility in encouraging students to actively engage with the material and with one another will be emphasized.
- **Online Assessment and Examinations:** Assessment frameworks that include competency design, portfolio management, rubrics, standardized tests, and assessment analytics will be created and implemented by the Appropriate bodies, such as the proposed PARAKH, National Testing Agency (NTA) and other designated organizations. Research will be conducted to test new assessment methods utilizing educational technology with an emphasis on 21st century capabilities.
- **Blended Models of Learning:** The value of in-person, face-to-face instruction is acknowledged while advocating for digital learning and education. As a result, various successful blended learning models will be found and suitable for replication in various subject areas.
- **Educational Digital Content and Capacity:** The government will establish a specialized unit to manage the e-learning requirements of both higher education and schools, with the aim of coordinating the development of digital material and infrastructure. Thus, professionals from the domains of administration, education, educational technology, digital technology and evaluation, e-governance, etc., would make up this centre.

➢ *Key Benefits of Digitalization of Education*

- **Accessibility and inclusivity for all:** With the use of digital technology, students from all over the world can access educational resources and materials, join an online course and complete training programs. All they require

is a stable internet connection. Notably, technology advancements like speech-to-text and text-to-speech effectively remove barriers for students with disabilities, allowing almost anybody to participate in the educational process.

- **Personalized learning:** Students can utilize digital tools to learn new content at their own pace and modify lessons to fit their own interests and cognitive abilities while studying. Additionally, students can enjoy more individualized experiences and integrate learning resources from many sources with the use of specialized learning experience platforms.

- **Greater engagement-** Teachers can help students learn and assimilate new information in more interesting ways. Through learning platforms, teachers can also build and oversee groups in a digital cooperative environment where students can efficiently share information, take part in discussions, and respond to inquiries from teachers.

- **Cooperative learning-** Digital learning forces collaboration. Learning platforms allow teachers to create and manage groups.

- **Time-saving-** Digitalization can save time in today's fast-paced world. A well-developed transportation system is absent from many cities outside of metro areas. Because of this, students might have to travel for many hours to get to their schools. In this case, students can take advantage of a digital course from even the most remote regions of the nation.

➢ *Challenges*

- **Insufficient tech knowledge and skills-** The digitalization of educational processes will not take place until educators have a proper understanding of how to use digital tools in teaching and learning activities.

- **Lack of willingness to adapt:** Some educational institutions may find it challenging to modify how they manage their internal processes because they are reluctant to step outside of their comfort zone.

- **Lack of planning and strategy-** One of the key obstacles to progress today is to determining where to proceed with digitalization. Because it can be challenging to know which course to pursue or how to develop a strategy because the possibility of widespread change can be daunting.

- **Unequal Access-** Not all students could possibly afford the high prices of contemporary technologies. Therefore, in order for the whole digital transformation to be successful, classes must give students access to all the tools and resources they need in a uniform way.

III. CONCLUSION

The New Education Policy 2020 is a progressive document that recognizes the important role of technology in advancing teaching and learning. It discussed almost all the aspects of using technology to give everyone access to high quality education. It suggested all digital resources which are necessary for the current educational system as the digital transformation of education aims to improve quality, access and efficiency in the education sector, making learning more accessible, interactive, and relevant to the needs of the 21st century. This transformation is driven by technological advancements and the recognition of the importance of preparing students for the digital age.

Digitalization in education can be implemented in numerous ways, from online learning, student assessments, personalized learning experiences, and online exams. In general, the adoption of digital technologies is significantly more important for the success of the National policy of education 2020 in India. It could raise student achievement and engagement, improve educational quality, and make education more widely available. By embracing digitalization, India can take a major step towards realizing its goal of becoming a global leader in education.

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