



From Barriers to Bridges: Navigating Women's Empowerment Through ICT in NEP 2020

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Abstract

Indian women have always faced less favourable status in various sectors than their male counterparts. Women's empowerment is a burning issue at this age. As such, women all over the world are exercising their social, political and educational rights on the internet. Technology has a lot to offer in terms of supporting the development of women's capacities and resources. Access to Information and Communication Technology (ICT) is crucial for women and girls to achieve personal security, better access to education, jobs and basic healthcare information. This paper brings into notice how the concept of women empowerment is defined, utilized and promoted with the integration of ICT within the framework of the National Education Policy (NEP) 2020, highlighting both the barriers and opportunities it presents. The goal is to analyse how NEP 2020, with its vision to transform the Indian Education System through ICT has the potential to empower Indian women and bridge the gender digital divide, the need for women's empowerment in the modern context, and further explore some promising suggestions for ensuring the same through ICTs as technologies have been and will continue to be of use. Here, a scoping review of various interventions of Government initiatives have been discussed to give a quick guide on how ICT integration is a tool for development to improvise the condition of Indian women in the present times. Following the synthesis resulted in identifying the awareness and demands of such a tech-mediated environment and the opportunities that such awareness, or lack thereof, has on women. Ultimately, the study concludes with an observation that the transformative potential of implementing ICT with policy frameworks like NEP 2020 enables women to enhance their status in society and also opens up a direct window for women to the outside world.

Keywords: Digital Divide, ICT, NEP 2020, Technology, Women Empowerment



Introduction

India is a country of grand contradictions. While it is a global leader in the knowledge economy, it is also home to more than half the world's poor and illiterate people, most of whom are women." (Reddi & Sinha, 2004, p. 245). The sex ratio improved slightly from 919 in 2015-16 to 929 in 2019-21. The gender gap between male (84.70%) and female (70.30%) literacy rates remains high at 14.40% as per the 2021 Census. It is an essential fact that a society can never develop by keeping its women on the sidelines and that they should be able to participate in society on equal terms with men. The origins of the concept of empowerment date back to the civil rights movement in the USA in 1960, in response to the need for social justice and gender equality. It has since then been defined in several ways. For this paper, the definition of women's empowerment is a process by which women can make autonomous life choices for their own security and personal priorities. Empowerment is a "social action process that promotes participation of people, organizations and communities in gaining control over their lives in their community and larger societies" (Stein, 1997, p. 7). Women empowerment enables women to voice out their opinions and develop their own identity in all spheres of their lives. According to Sen and Batliwala (2000), it leads to "a growing intrinsic capability, greater self-confidence, and an inner transformation of one's consciousness that enables one to overcome external barriers" (p. 16).

Working towards a more equitable society, the National Education Policy (NEP) 2020 sets forth a transformative agenda that integrates women's empowerment as a core objective. NEP 2020 is a paradigm shift in Indian education policy that aims to foster equity, inclusivity, and lifelong learning through structural reforms and innovative pedagogies. Among its priorities is women's empowerment through improved access to quality education and strategic use of Information and Communication Technology (ICT). The integration of ICT within the NEP 2020 framework also serves to address and bridge gender disparities in education and digital engagement. Through digital literacy, online learning centres, and technology-based vocational training, the policy aims to open up educational and economic prospects for women, especially those living in rural, remote, and socio-economically disadvantaged areas. This intersection of education policy and digital innovation promises transformative power for women's empowerment, facilitating greater independence, skills acquisition, and involvement in the knowledge economy. Therefore, analyzing the intersection of



NEP 2020 and ICT with a gendered perspective is crucial to understand its broader implications for social equity and inclusive development.

A Gender Perspective on ICT

Over the last few decades, there is a stunning increase in the use of technology and it can be said that the need for ICT integration in all fields has also been rapidly increasing. There is also an increasing need to acquaint everyone with the knowledge and information they require in this techno-savvy era. Information is no longer restricted to only published works in the technology-mediated learning environment as anyone with access to basic technology resources can learn anytime, anywhere. According to Chen (2004), “with low usage costs and the ability to overcome distance, ICTs have revolutionized the transfer of knowledge and information around the world.”

Despite advances in technology, the diffusion of digital ICT remains uneven due to the fact that there is an immense information and communication technology gap, a “digital divide”, between women and men. The term originated in the mid-1990s in the United States and is fundamentally linked to the problem of gender inequality at its roots. Consequently, the term digital is “used to explain the social implications of imbalanced access of some sectors of the community to information and communications technology and to the achievement of necessary skills (Cronin, 2002, p. 48).” In simple words, the term “digital divide” means to unequal access to information technology. Today the gap, the “digital divide”, between women and men regarding access to ICT, and challenges when using the same can pose an obstacle to women’s participation in our increasingly digital societies. It also undermines the opportunities for defending human rights.

Importance of bridging the gender digital gap

One of the core targets (Target 5) of the Sustainable Development Goals (SDGs) that came out in 2015 aims to “Achieve gender equality and empower all women and girls” (p. 20) by the year 2030. A major SDG indicator supporting the need for women’s empowerment is “5.b: Enhance the use of enabling technology, in particular information and communications technology (ICT), to promote the empowerment of women ” (p. 20). Therefore women’s empowerment through ICT is considered both as one of the key objectives and as a major part of the overall solution. ICTs and human rights have become intertwined. Moreover, the first UN report to highlight human rights’ relevance on the internet to fully achieve women’s empowerment in connection with ICT came out



in 2000. With the transformative potential of ICTs and their impact on human rights, ICT has the potential to dismiss some barriers faced by women like illiteracy, poverty, social, cultural and religious taboos.

National Family Health Survey-5 data from 2019-2021 also reveals that about half of women in India (54%) have access to the internet, an increase of 8 percentage points since 2015-16. A remarkable intervention by UNESCO under its research project "Putting ICTs in the Hands of the Poor" was the project on "Networking Rural Women and Knowledge" organised in Nabanna, India, which explores innovative information-sharing networks in the local language for the benefit of poor women. The project enabled women to acquire ICT skills at the training centres– learning to use a computer and sharing the information to local people. This resulted in them becoming more creative after learning a program like Paintbrush in Windows XP and boosting their confidence to find jobs. ICT skills helped them have a voice in the community, hence increasing their influence on local government in terms of literacy, girls' education, sanitation and family planning.

Intersection of ICT and NEP 2020: Opportunities for Women

The intersection of ICT and the NEP 2020 opens up numerous opportunities for women towards a more gender-inclusive space that is more transformative, especially in terms of education, empowerment, and skill development. As Beerannavar and Pancrasius (2024) stated "the National Education Policy 2020 also represents a paradigm shift in the Indian education system, significantly emphasizing leveraging Information and Communication Technology to enhance access, equity, and quality of education across all levels." Paul et al. (2015) also emphasised that "ICT and NEP 2020 together hold immense potential to help women in India gain more power, especially by making it easier for them to use and access digital technologies."

Some key areas illustrating how this integration can positively impact women include:

1. **Increasing access to Digital Tools and Resources:** A central focus of NEP 2020 is to increase access to digital tools and resources to close the gender digital divide. The policy also seeks to improve digital infrastructure, particularly for women in rural and remote areas with limited access to technology. This will enable them to acquire the required knowledge and skill to leverage digital platforms for various purposes, ranging from personal to professional development.



2. Skill Development and Vocational Training through ICT: NEP 2020 envisions a flexible learning environment through online certificate courses, vocational education, distance learning, and skill-development programs in areas like coding, software development, data analytics, etc. Women can be trained and educated in digital marketing, e-commerce or technical skills through online platforms. This in turn will also provide a better scope for women's employability.

3. Extending Women's Access to Education through E-Learning Platforms: NEP 2020 also envisions a more flexible education system by offering blended or e-learning. Such opportunities are particularly helpful for women who reside in rural or remote areas. Women from diverse socio-economic backgrounds can access learning content and materials at their own pace and schedule without having to physically attend conventional classrooms to meet their educational needs while upholding family responsibilities or requirements. This revolution is a significant stride towards an inclusive education system.

4. Incentives for Women's Participation in STEM: NEP 2020 advocates for enhancing women's participation in STEM (Science, Technology, Engineering, and Mathematics) courses, which traditionally have lower representation of women. ICT, being a core area of these courses, too, offers women opportunities to be mentored, receive scholarships, and share platforms for collaboration. This is a significant push for encouraging women to pursue a career in computer science, engineering, and technology-related domains.

5. Promoting Women's Entrepreneurship through ICT: Another key vision of NEP 2020 is providing a platform for women to access global markets and resources, overcoming traditional barriers to entrepreneurship. This will enable them to promote and sell their products online through e-commerce platforms and social media. This is a significant initiative of the policy to empower women entrepreneurs in various fields, from technology to health and agriculture.

6. Breaking Geographical Barriers: NEP 2020 has revolutionised education by breaking geographical barriers and ensuring equal opportunities for women in India. Perhaps the strongest means through which ICT shatters geographical barriers is through online learning. NEP 2020 encourages blended learning, where face-to-face and online learning are combined. This approach can enable women in



geographically remote locations to engage in virtual classrooms, interact with students from other parts of the country, attend webinars and gain expert advice without having to travel long distances.

7. Enhancing Health and Wellbeing: NEP 2020 supports integrated education, including health education, which can be fortified using online platforms. Women from rural or underserved regions can access medical care, online health consultations, wellness services, and mental health facilities, enhancing their overall wellbeing. Women are also given a platform online to express their grievances and report cybercrimes and online bullying.

8. Incorporating Gender Inclusive Pedagogy: NEP 2020 emphasises the revision and reformulation of curricula to eliminate gender biases and to reflect a balanced history, culture and contributions of both men and women. ICT can facilitate this effort by creating a space for the teachers to access new pedagogical materials and share their practices. The NEP 2020 highlights the need for a holistic education approach under which digital platforms can be used to share women's success stories where they have traditionally been marginalised, such as in STEM, sports, and entrepreneurship. Social media, e-learning portals, and digital libraries can also be used to promote these voices to the forefront, thus giving voice and empowerment to girls and young women.

Therefore, ICT, when aligned with the objectives of NEP 2020, presents enormous opportunities for women, eliminates traditional barriers, and provides new pathways for women's empowerment. According to Beerannavar and Pancrasius (2024) "the integration of ICT into the NEP 2020 framework presents a unique opportunity to address historical gender disparities in education and empower women through enhanced access to knowledge, skills, and resources."

Importance and Scope of the Study

This study is based on the understanding that the vision of NEP 2020 aligned with ICT offers strategic pathway to support women's empowerment through better access to education, skills, entrepreneurship, healthcare and many more. It focuses on the integration is an important step to address and reduce gender disparities in India.

The scope of this study touches upon various aspects of women's lives in ICT-driven fields. It analyzes ways in which digital technologies and platforms, as advocated by NEP 2020, can foster an inclusive environment for women with the education and expertise required to be a part of the emerging digital economy. Additionally, this research aims to generate evidence-based insights into



NEP 2020's policy frameworks and interventions that promote gender inclusive digital development. Specific focus is given to the identification of the socio-economic, infrastructural, and cultural obstacles hindering access to ICT, and assessment of innovative strategies to overcome gender digital gaps. By examining the role of ICT within the broader vision of NEP 2020, the study hopes to contribute meaningfully to the growing body of literature on inclusive education, gender equality, and sustainable development.

Objectives of the study:

The primary objectives of the study are:

- To evaluate the role of ICT in bridging the gender digital divide
- To evaluate the effectiveness of ICT initiatives in NEP 2020 in promoting digital literacy among women
- To assess the role of ICT in fostering lifelong learning opportunities for women as a part of the vision of NEP 2020
- To identify the challenges for women in accessing ICT-based education and training

Research Methodology and Sources of the study:

This paper explores the link between women's empowerment and ICT, particularly within the educational framework of NEP 2020. The study is theoretical, grounded in a qualitative and interpretive research approach, which is based on describing and analysing the collected materials. The study draws on a wide array of existing literature to build an in-depth understanding of the subject. Sources include periodicals, journals, books, articles, policy documents, government reports, surveys, etc., that focus on women's empowerment through technologies. The search and selection criteria were based on aligning with the themes of the study- gender, education, digital inclusion, ICT policy, and the implementation of NEP 2020. Data obtained were critically reviewed, analysed, and interpreted through a conceptual framework that aligns with the need of the study.

Schemes for Women's Empowerment through ICT

Role of NGOs:

Various organizations have led to improvement in the status of women through ICT and are still dedicated to uplifting and protecting women for more than two decades. The Dhan Foundation (2004) and Swayam Krishi Sangam (2004) aim to educate poor women about ICT and the use of handheld



devices and smart cards to improve microfinance projects, thereby enabling them to achieve the independence they deserve. The Self-Employed Women's Association (SEWA, 2004) has several ICT projects to support rural women, including 'Video SEWA' to bring to light diverse opportunities for earning income and health information videos. SMILE (Savitri Marketing Institution for Ladies Empowerment) organizes seminars to provide computer literacy to females from six years to sixty years. This initiative aims to bridge the digital divide by educating women about computers and the various benefits they offer.

Role of Government:

Over the last ten years, the Government of India, through its Ministries of Women and Child Development, Social Justice and Empowerment, among others, have taken up various approaches to identify prime issues and challenges to propose strategic interventions to enhance women's empowerment through ICTs. Some of the programmes put in place to make this feasible are as follows:-

In December 2018, Digital India Corporation, established by the Ministry of Electronics and Information Technology, successfully executed an ICT-based Integrated Development Program for digital empowerment of minority community women artisans in Varanasi by imparting training on digital design, making, and marketing of their products with e-commerce portals.

One Stop Centre Scheme (2015) provides security and psychosocial support to women who have been subjected to violence in both public and private spaces. Similarly, the Women Helpline Scheme (2016) facilitates free 24-hour telecommunication service and provides the right support services and programs for women who have been subjected to violence. The campaign known as Bell Bajao (Ring the bell) has led to an increased awareness of domestic violence and crime laws.

Gyandoot is an e-government initiative initiated by the state government of MP (India) that offers a network of computers connecting rural areas with day-to-day information. Along with that, the innovation of safety applications such as Safetipin, Raksha, Himaat, Shake2Safety and many more, includes features that are simple to operate for women of all ages, making it easier to track women's safety twenty-four hours a day.



e-Learning for Women in NEP 2020

e-Learning for women is a vital tool to acquire education and training through the internet from anywhere, irrespective of their geographical location or societal obligations. It also provides ample opportunities for skills development, enabling career progression, and fostering self-empowerment in various spheres. In other words, through the utilization of ICT for e-learning, women can break free from conventional barriers in education and study at their own pace and time.

Some noteworthy e-Learning platforms for women that align with the NEP 2020 to improve access to quality education, enhance digital literacy and narrow the digital divide include:

SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) is an online education portal run by the Government, which offers online courses from India's top universities and institutions for free or at affordable prices. The courses, available in multiple languages, aligns with NEP 2020's vision to make education accessible and inclusive. This is particularly beneficial to women of rural or underprivileged communities, allowing them to pursue courses in science, technology, engineering, and mathematics (STEM), social sciences, business, entrepreneurship, and personal development through the portal's Massive Open Online Courses (MOOCs).

NPTEL (National Programme on Technology Enhanced Learning) is a joint platform initiated by IITs (Indian Institutes of Technology) and IISc (Indian Institute of Science) to provide free online courses, especially in the fields of engineering, technology, and science. It offers certificate courses which can be beneficial for women in advancing their careers in technical roles. It is in accordance with NEP 2020 on the support for women's participation in STEM education and skill development.

DIKSHA (Digital Infrastructure for Knowledge Sharing) is another initiative of the Government of India to improve the overall process of teaching and learning experience across India. Though not solely designed with a particular emphasis on women, it provides women teachers and educators access to multiple training modules on ICT tools, allowing them to enhance their skills and knowledge through its well-structured Continuous Professional Development (CPD) courses. In addition, DIKSHA's interactive lesson plans, assessments, and instructional resources are specially developed to address and fulfil the educational needs of diverse scales, promoting inclusiveness for women learners and educators.



e-PG Pathshala (for postgraduate level education) and e-Pathshala (school-level education) are two well-known digital projects of the Ministry of Education under the National Mission on Education through Information and Communication Technology (NMEICT). These websites aim to provide women with access to high-quality, curriculum-based content from the comfort of their home, thereby offering a convenient means to seek education without any geographical limitation. The platforms provide detailed learning content for different subjects, and the content is developed and curated by subject matter experts from all over the country. These platforms can even be used by women teachers to gain access to teaching resources, attend workshops, and improve their professional capabilities through interactive tools and resources. Thus, e-PG Pathshala and e-Pathshala are in tune with India's Digital India Campaign and the vision of NEP 2020, as they encourage inclusive learning and empower women at all levels of their academic pursuit through digital learning tools.

Key Challenges

1. **Digital Divide:** A significant digital divide always remains, particularly in rural and remote areas. Inadequate infrastructure, expensive internet access, and poor digital literacy collectively restricts women's engagement with and benefit from ICT.
2. **Inadequate Training and Support Mechanisms:** Lack of specific digital literacy and capacity development initiatives for women reduces their ability to utilize and derive benefits from ICT platforms entirely.
3. **Socio-Economic Constraints:** The Existence of deeply embedded cultural mores, economic difficulties, and constrained access to formal education perpetuates women's exclusion from ICT opportunities
4. **Resistance to Change and Gender Biases:** Institutional and societal resistance to gender-inclusive practices and dominating stereotypes frequently deters women from pursuing technology-related disciplines or lifelong digital education.
5. **Policy Gaps and Institutional Fragmentation:** Structural weakness in policy design and inadequate coordination among key stakeholders, including government bodies and academic institutions, limits the development for creating of a holistic and inclusive digital framework.



6. **Safety and Security in Digital Spaces:** Despite the empowering potential of ICT, women are often at the risk of cyber harassment, monitoring, and data invasion in the digital arena. Providing secure and empowering online spaces remains a crucial area of concern.

Discussions

In recent years, through the implementation of various ICT-related projects, women's empowerment has been improved. The main objective is to make women independent, powerful and strong in all fields. The study also clearly aligns with the fact that women immensely benefited from the use of ICT. The scoping review on some significant types of empowerment analyzed and now summarised includes increased access to the job market and opportunities to boost small business growth, rural women's access to paid work using ICT skills, educational and personal information, awareness and understanding of new ICTs and their potential benefits. It has also created a psychological comfort level for women by having access to additional knowledge and skills and as a result, they experience greater well-being and happiness in life.

Despite these gains, however, there is a lack of in-depth understanding of women's empowerment through the use of ICTs. Moreover, women having meaningful access to ICT can also be hindered by several factors like affordability, skills, and online gender-based violence such as stalking and harassment. Thus, the development and utilisation of ICT should be properly guided and regulated by the supporting firms working towards women's empowerment through ICT. For India to leverage ICT to promote the empowerment of women, governments need to address the barriers to technology access and how the challenges can be overcome. Also, most of the schemes and e-Learning platforms are still relatively unknown, so people need to be made aware and well-informed of these. In order to achieve the United Nations Sustainable Development Goals (SDGs), creating the need to support digital gender equality and close the digital gender gap is of utmost importance to strategize the implementation of ICT in a feasible and sustainable manner, especially in developing countries like India.

Conclusion

All through history, gender disparity has always been an issue. In the current era of unrestricted access to the internet, access to ICT is crucial for women and girls to be able to participate in society on equal terms with men and boys. ICT has made a tremendous impact in imparting knowledge on



modern technology and its uses. With the introduction of various digital platforms, specifically for women, women have developed a greater sense of awareness of how ICT can be leveraged for personal as well as financial security, better access to education and jobs, or to access basic healthcare information. As discussed in the paper, NEP 2020 advocates for the creation and promotion of the e-Learning platforms that offer inclusive, accessible and flexible learning opportunities for women. Governmental agencies and NGOs working in the field have also extended their help to promote ICT among women. Since its inception, it can be hypothesized that, while not a cure-all, ICTs could raise the quality of life and provide a voice for women who utilise them. Overall, ICT acts as a key driver that can open more doors for women in addressing gender disparities and in turn initiate a change in the global scenario.

References

- Beerannavar, C. R., & Pancrasius, S. (2024). *National Education Policy 2020: Equity and inclusion in India's education system*. In J. Sánchez-Santamaría & B. Boroel Cervantes (Eds.), *Exploring educational equity at the intersection of policy and practice* (pp. 138–158). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3693-1614-6.ch008>
- Chen, D. H. C. (2004). *Gender equality and economic development: The role for information and communication technologies* (Policy Research Working Paper No. 3285). World Bank. <https://doi.org/10.1596/1813-9450-3285>
- Cronin, B. (2002). The digital divide. *Library Journal*, 127(3), 48–50.
- Government of India. (2020). *National Education Policy 2020*. Ministry of Human Resource Development. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Ministry of Health and Family, Government of India. *National Family Health Survey (NFHS-5) 2019-21*. https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf
- National Statistical Office (NSO). (2021). *Literacy rate of India 2021*. <https://www.findeasy.in/indian-states-by-literacy-rate/>
- Paul, A., Thompson, K. M., & Heinström, J. (2015). After access: An inquiry into ICT use factors for Indian women. *Proceedings of the Association for Information Science and Technology*, 52(1), 1–10. <https://doi.org/10.1002/pra2.2015.1450520100144>



- Rathi, S., & Niyogi, S. (2015). Role of ICT in women empowerment. *Advances in Economics and Business Management (AEBM)*, 2(5), 519–522.
- Reddi, U. V., & Sinha, V. (2003). India: ICT use in education. In G. Farrell & C. Wachholz (Eds.), *Meta survey on the use of technologies in education in Asia and the Pacific 2004–05* (pp. 245–252). UNESCO Bangkok.
- Sen, G., & Batliwala, S. (2000). Empowering women for reproductive rights. In H. B. Presser & G. Sen (Eds.), *Women's empowerment and demographic processes: Moving beyond Cairo* (pp. 15–36). Oxford University Press.
- Stein, J. (1997). *Empowerment and women's health: Theory, methods and practice*. Zed Books.
- United Nations. (n.d.). *Sustainable Development Goals report*.
<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>
- United Nations Women and ICT Frontier Initiative (WIFI). (2016). *Women and ICT Frontier Initiative: Women's empowerment, SDGs and ICT*.
https://www.unapcict.org/sites/default/files/inline-files/Module_C1.pdf