



Digital Literacy In India: Achievements And Challenges

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Abstract

During the 21st century developing nations underwent major changes in their social and economic structures as digital technology transformed into fundamental systems for governance administration, educational establishments and financial programs. The digital arrival of India faces significant literacy gaps even though the government implements large-scale programs for digitization. A study will then track the digital literacy revolution in India through the evaluation of government plans keeping in mind infrastructure development along with corporate collaborations for universal digital empowerment. The paper uses digital inclusion and liberal-institutionalist frameworks to evaluate the digital ecosystem of India while providing an analytical investigation of its achievements and internal obstacles.

Keywords: Digital Literacy, E-Governance, PMGDISHA, BharatNet, Digital Divide, Public-Private Partnership.

INTRODUCTION

Digital technologies have revolutionized the way people interact with governance and economic systems and public service administration through all parts of the world. The digital divide gaining increased importance in India because of rapid growth in digital infrastructure as well as online service platforms. These digital expansion initiatives such as Digital India and BharatNet endeavour to develop a solid digital infrastructure however their distribution and utilization capabilities are not equitably spread throughout different population areas. The National Statistical Office (NSO, 2021) reports that Indians reach only a 32% level of digital literacy but urban population demonstrates superior digital skills compared to rural communities. Various elements including gender inequality along with insufficient infrastructure and security threats alongside social economic conditions automatically create these divisions.

Digital literacy goes further than simply mastering technical skills during this present moment. People who possess digital literacy distinctively master the techniques of accessing and functioning in digital platforms toward personal interests and economic pursuits and civic responsibilities. The implementation phase of

digital literacy programs at the grassroots level demonstrates inadequacies regarding outreach success and inclusion accessibility as well as sustainability challenges. A thorough academic assessment of India's digital literacy environment requires empirical findings supplemented by theoretical constructs because of the urgent requirement.

AIM OF THE STUDY

- To examine the concept and significance of digital literacy in the Indian context.
- To assess major government-led and state-level digital literacy initiatives.
- To analyse the key achievements and progress of digital literacy programs.
- To identify the persistent structural, social, and technological challenges.
- To propose actionable measures to enhance digital inclusivity and empowerment.

REVIEW OF LITERATURE

Digital literacy analysis in India requires examination of both national programs alongside international definitions of digital access. Various experts have studied how technology relates to governance while concluding that citizens must develop both reading skills and digital competencies.

Abilash (2022) demonstrated how both digital literacy and e-governance technologies serve as tools for socio-economic development that enhances the circumstances of marginalized groups especially among tribal people. The analysis revealed government programs achieved remote locations but poor digital infrastructure together with limited contextual learning barriers persisted in long-term acceptance.

According to Kiran (2022) citizen empowerment demands more than basic infrastructure because national e-governance programs require complete digital capacity building to be accessible. Effective rural digital transformation requires rural citizens to develop digital behaviour changes while infrastructure remains essential for digital development according to Amutha (2022).

Further, Shetty (2019) researched how India's telecom and internet expansion has led to lower corruption alongside better government performance. The author revealed major digital trust and cybersecurity issues which remain as barriers to broader acceptance of digital technology.

According to Verma and Singh (2020) women face restricted access to digital tech because of traditional social structures in Indian society. The PMGDISHA program received acclaim for its approach to reach specific groups of people during outreach events.

In a global analysis, Patel (2018) recommended that India should adopt adaptive implementation strategies which digital leadership nations Estonia and South Korea have already implemented.

All of these academic studies demonstrate a dedicated focus on making digital literacy programs in India available to everyone while ensuring effective functioning of educational institutions.

CONCEPTUALISING DIGITAL LITERACY

Digital literacy surpasses device operation skills to establish critical thinking abilities and responsible digital participation that happens through digital platforms. Professor Gilster (1997) developed digital literacy as an ability to manipulate different digital media while comprehending their content.

UNESCO (2018) explains that digital literacy involves safely and properly dealing with information through digital platforms by accessing it and managing it for understanding and integration and communication and creation. The framework simultaneously values critical thinking alongside digital ethics because these areas are highly important during contemporary times of misinformation spread and data security threats.

By defining digital literacy in India, the Ministry of Electronics and Information Technology (MeitY, 2020) has established it as the capability of people and communities to utilize digital technologies for government access and financial management and educational pursuits. The method supports the objectives of the Digital India campaign.

THEORETICAL FRAMEWORK

The development of digital literacy in India can be examined through the conceptual lens of an emerging idea—‘Digital Institutionalism’—which, akin to Keohane and Nye’s liberal institutionalism, emphasizes the importance of stable institutions, coordinated norms, and cooperative mechanisms to facilitate inclusive and sustainable digital empowerment. In this framework, ‘Digital Institutionalism’ refers to the structured coordination among national policies, bureaucratic agencies, public-private partnerships, and local digital centres that together create an enabling ecosystem for digital empowerment. Much like liberal institutionalism supports cooperative state behaviour under anarchy, digital institutionalism fosters inclusive digital transformation under conditions of socio-economic disparity and infrastructural inequality. The European Commission created the Digital Competence Framework for Citizens (DIGCOMP) which contains five distinct dimensions described by Carretero et al. (2017).

1. Information and data literacy
2. Communication and collaboration
3. Digital content creation
4. Safety and security
5. Problem solving through digital means

Eshet-Alkalai (2004) co-developed a multi-dimensional digital literacy framework that focuses on photo-visual literacy together with information navigation and reproduction and socio-emotional understanding and ethical online behaviour.

The Indian model crosses these frameworks with specific local programs to resolve problems stemming from language differences along with economic inequalities and rural digital disconnection.

ACHIEVEMENTS OF DIGITAL LITERACY IN INDIA

India has started its digital transformation through combined efforts of large-scale national programs and de-centralized state efforts and public-private partnerships. This section evaluates the major accomplishments which have improved digital literacy throughout the country through institutional work together with infrastructure development and education system advancement.

Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)

PMGDISHA launched its mission in 2017 by the Ministry of Electronics and Information Technology to teach digital literacy to rural household residents across India. During 2023 the training program reached 4.1 crore beneficiaries to master basic computer skills alongside internet usage and digital payment systems and online service operation (MeitY, 2023).

PMGDISHA mainly helps rural residents with no technological background who reside in non-prosperous areas. The decentralized nature of this program makes it possible to implement through Common Service Centres (CSCs) which operate training centres at the local level thus increasing efficiency and outreach.

Common Service Centres (CSCs)

Common Service Centres serve as the foundation by which India distributes digital services across rural areas. Under the CSC-SPV (2022) over 4.2 lakh Common Service Centres throughout the nation enable people to receive telemedicine and e-learning features and access financial literacy courses and Aadhaar registration and online public service platforms. These centres act as both teaching centres with digital training facilities while also creating job opportunities in the nearby regions.

CSCs advance the digital skills of users in vernacular languages through local trusted entrepreneurs to create well-being and empowerment especially for women and senior citizens.

Bharat Net and Infrastructure Development

The broadband connectivity project BharatNet stands as one of the biggest worldwide rural networks which targets high-speed internet connections for 2.5 lakh village governance bodies. The Universal Service Obligation (USO) Segment of the Department of Telecommunications (DoT) revised the 1.7 lakh panchayats with optical fibre connectivity in 2022. The digital framework developed by the initiative creates essential prerequisites which support rural digital literacy programs.

Bharat Net solution bridges last-mile connectivity gaps which enables rural facilities such as schools and health centres and government offices to work better and help link rural residents to digital national platforms.

State-Level Innovations

In India many states have initiated several measures to enhance digital literacy. The North Indian states have established individual programs to provide digital literacy at the regional level. The state of Kerala launched Akshaya Programme as an advanced large-scale e-literacy project to make the entire state digitally literate. The state of Rajasthan operates e-Mitra digital kiosks which provide government services

in over 500 categories via training and awareness programs. Tamil Nadu implements e-District as a scheme that uses backend operations integration to produce a smooth e-governance approach (Kiran, 2022). These state-led initiatives help implement central schemes to show how adaptive governance enables the advancement of digital literacy.

Digital Financial Literacy and Inclusion

Digital financial inclusion grows rapidly in India since the introduction of Jan Dhan Yojana and the implementation of Aadhaar-enabled Payment Systems as well as UPI platforms. These digital financial instruments make people less reliant on cash while demanding proper understanding of electronic payments.

Citizens received valuable education about digital payments and cyber hygiene through national initiatives such as DigiDhan Abhiyan and Digital Saksharta Abhiyan (DISHA especially after the introduction of the 2016 demonetization policy according to (Verma and Singh, 2020).

Women and Marginalized Group Outreach

PMGDISHA serves as a training program which specifically delivers digital instruction to women who belong to rural and Scheduled Tribe populations. The digital skill development participation rates for females increased substantially in Odisha and Jharkhand and Chhattisgarh because these states provided special outreach programs alongside safe learning spaces and additional benefits for trainer women (Amutha, 2022).

These accomplishments demonstrate significant progress but additional effort remains essential to enhance digital policies through integrated approaches and sustainable practices and complete inclusivity. The following part discusses ongoing hurdles preventing universal digital literacy from becoming a reality in India.

CHALLENGES OF DIGITAL LITERACY IN INDIA

Although broad advancements have been made by extending digital networks and outreach initiatives India still encounters major hindrances in developing full-scale digital literacy. Multiple barriers stand in the way of achieving complete digital literacy because of the combination of socio-economic inequalities with infrastructure problems and cultural barriers and institutional barriers. The part reviews multiple complex barriers which prevent India from achieving digital empowerment.

Digital Divide and Regional Inequalities

India maintains an extreme digital divide which separates rural areas from urban centres throughout the country. According to the NSO (2021) data, the urban population exceeds 60% internet access but only 25% or fewer rural households have online connectivity. The existing digital divide becomes worse because of differences in electrical connection access combined with expensive digital infrastructure and high Internet fees (Shetty, 2019). Social-economic segregation forms the base of the digital divide in addition to advanced technology gaps.

Many remote locations throughout northeastern states and central Indian tribal regions alongside Himalayan hill areas find it difficult to enter digital education programs due to connectivity and logistical barriers.

Gender and Social Disparities

The factor of gender remains among the primary causes behind digital exclusion for individuals. The social beliefs and security restrictions and accessibility barriers prevent women particularly in rural conservative areas from benefiting from digital tools and training programs (Verma and Singh, 2020). People belonging to Scheduled Castes and Scheduled Tribes and linguistic minorities share similar exclusion experiences because training sessions and content material are not available in their local dialects while also not matching their cultural background (Patel, 2018).

There are insufficient female trainers and mentors in digital education environments which restricts female students from participating and staying in these learning spaces.

Infrastructure Deficiencies and Connectivity Gaps

Rural connectivity suffers from three main problems: consistent power outages, limited bandwidth availability, and insufficient maintenance of infrastructure which BharatNet has established. The functioning of CSCs in numerous villages remains partial because of unreliable power supply and technical hardware problems. Community centres and schools do not possess essential digital equipment required for consistent internet education. These infrastructural deficiencies limit both access to digital resources and the motivation to engage with digital platforms.

Cybersecurity Risks and Misinformation

Digital platforms have expanded so rapidly that they created new challenges about maintaining digital security and rebuilding trust. The number of online fraud attacks coupled with identity theft instances and phishing schemes and misinformation propaganda encounters greater frequency. The lack of awareness about digital safety protocols among new users exacerbates vulnerability (Amutha, 2022). Members of the elderly population and economically disadvantaged groups express mistrust in digital transactions because of psychological barriers they have developed.

Low Digital Literacy Among Bureaucracy and Service Providers

Achieving effective e-governance service delivery requires government staff members to demonstrate the same digital readiness as citizens need to possess. The lack of suitable digital expertise prevents panchayat-level workers and government teachers from utilizing or promoting online services in multiple geographic areas (Kiran, 2022). The inability of public officials to carry out PMGDISHA and NDLM schemes results in their complete breakdown in the final stages of implementation.

Institutional digital slowness creates delays for content updates and real-time grievance resolution instruments alongside translations of information.

Short-Term Program Design and Lack of Monitoring

Digital literacy programs maintain short-term time limitations alongside weak inspection systems. Lack of post-training support along with refresher courses and extended digital mentoring programs characterizes the situation. Older adults tend to lose their newly learned digital skills after training programs because they receive no sustained engagement.

Ground-level assessment becomes challenging due to insufficient real-time data transparency and lack of third-party audits which makes effective monitoring and correction of programs difficult.

CONCLUSION

Digital literacy represents a fundamental requirement that supports both inclusive growth and participatory governance and democratic resilience in the 21st-century government of India. The vital national programs PMGDISHA, CSCs and Bharat Net have established basic infrastructure yet multiple institutional and functional problems still require resolution. To unite these disconnects policymakers must develop an intervention which links liberal institutionalism to functionalist integration by organizing both top-level official coordination with grassroots community initiatives.

Multiple policy methods need implementation to achieve successful results. India should establish the National Digital Literacy Commission (NDLC) which would serve as a body that unites state departments with ministries to ensure equal distribution of digital resources by drawing guidance from various civil society groups and grassroots stakeholders. The training process needs to focus on developing localized multilingual education programs through audiovisual instructions and offline educational resources in tribal areas and underserved regions. The implementation of local digital support personnel functioning as ASHA members would guarantee ongoing digital outreach assistance. Through the frameworks of NEP 2020 and the Skill India initiative and Stand-Up India program the incorporation of digital literacy education will establish continuous digital expertise across generations. The government should use incentives to motivate Public-Private Partnerships to establish mobile training facilities and broaden their reach into distant districts especially through Corporate Social Responsibility (CSR) initiatives. Education regarding digital safety and ethics needs to include practices of cyber hygiene together with focus on protection for users and ways to seek remedy. These instructions should be available in local languages. Real-time monitoring tools along with user-centered feedback systems offer transparency benefits which enable adaptive policy-making and track outcomes while increasing transparency.

Digital literacy in India needs to be understood beyond technological requirements because it serves as a fundamental socio-political transformation objective. Active participation of communities alongside collaborative institutional systems will create a digitally empowered society based on national progress and trust and equity.

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