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# Digital Literacy and The Role of Employment in India

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**Abstract**

Digital literacy, defined as the ability to effectively use digital technologies for accessing, managing, and communicating information, has become a cornerstone of modern economies. In India, the rapid digital transformation driven by initiatives like "Digital India" highlights the critical role of digital literacy in employment generation. However, despite significant progress, challenges such as skill gaps and regional disparities persist. This report explores the current state of digital literacy in India, its impact on employment, government initiatives, and the way forward.

**Key Words:**Digital Literacy, Digital Transformation, Skill Gap and modern economy.

**Introduction**

Digital literacy is essential for India's economic advancement. It involves navigating and using digital technologies effectively. A digital divide exists between urban and rural areas due to limited access to technology, insufficient skills, and language barriers. Digital proficiency is now a prerequisite for employment, enabling access to online job platforms and remote work. The Indian government has launched programs like Digital India and PMGDISHA to address this gap. Challenges persist, including infrastructural deficits, skill mismatches, and the need for multilingual content. India must prioritize expanding internet access, providing skills training, and promoting local language content. By addressing these challenges and leveraging opportunities in e-commerce and digital entrepreneurship, India can cultivate a digitally empowered workforce. This will drive inclusive economic growth.

**Current State of Digital Literacy in India**

India is home to over 700 million internet users, making it the second-largest internet market globally. Despite this impressive figure, digital literacy remains alarmingly low. According to the National Sample Survey Office (NSSO), over 70% of Indian youth aged 15–29 cannot perform basic digital tasks like sending emails with attachments or transferring files between devices. This gap is even more pronounced among rural populations and marginalized groups such as women and Scheduled Tribes.

**Key Findings Include**

- Only 48% of Indian graduates are employable in roles requiring advanced digital skills like AI and machine learning.
- Rural areas face a significant digital divide, with only 13% of agricultural workers being digitally literate compared to 73% of urban salaried workers.
- Women's access to digital tools remains limited, with only 33% having ever used the internet.

This lack of basic digital proficiency limits job opportunities and hinders economic growth.

**Ditigal Literacy and Empolyment Generation**

Digital literacy significantly influences job creation through several key avenues:

**Enhancing Employability**: The demand for skills such as data analysis, coding, cybersecurity, and digital marketing is on the rise among employers in various industries. Graduates who possess expertise in these fields tend to have enhanced employability prospects.

**Enabling Entrepreneurship:** Furthermore, digital platforms enable individuals to establish online businesses. A notable example is the women entrepreneurs in Haryana, who utilized Facebook to grow their bangle-making enterprise, resulting in a 60% increase in earnings during festive periods.

**Bridging Skill Gaps**: Additionally, technology-driven sectors, including artificial intelligence, data science, and e-commerce, are generating new job opportunities, such as AI trainers and prompt engineers. Nevertheless, without sufficient upskilling initiatives, many individuals in India may find these prospects out of reach.

**Government Initiatives**

The Indian government has implemented several programs to address digital literacy challenges:

**1.Pradhan Mantri Gramin Digital Sakahrta Abhiyan:** Launched in 2017, this program aims to make 60 million rural citizens digitally literate by providing basic training on using digital devices and accessing e-services. To date, over 27 million individuals have been certified under this scheme. The following table summarizing the registered, trained, and certified candidates under the PMGDISHA scheme, by state, based on the latest data available (June 27, 2024)

| Sl. No. | State Name | Registered Candidates | Trained Candidates | Certified Candidates |
|---|---|---|---|---|
| 1 | Andaman and Nicobar Islands | 5,564 | 2,931 | 1,813 |
| 2 | Andhra Pradesh | 23,01,731 | 19,17,452 | 13,90,142 |
| 3 | Arunachal Pradesh | 14,949 | 11,615 | 6,615 |
| 4 | Assam | 27,21,585 | 23,60,195 | 18,75,452 |
| 5 | Bihar | 82,40,606 | 74,12,740 | 54,62,848 |
| 6 | Chhattisgarh | 24,86,455 | 21,37,064 | 16,06,777 |
| 7 | Dadra & Nagar Haveli and Daman & Diu | 20,522 | 18,029 | 13,938 |
| 8 | Goa | 58,569 | 53,784 | 40,005 |
| 9 | Gujarat | 30,31,310 | 26,83,286 | 19,84,049 |
| 10 | Haryana | 18,57,815 | 15,77,109 | 11,90,337 |
| 11 | Himachal Pradesh | 6,61,922 | 5,32,976 | 3,98,166 |
| 12 | Jammu and Kashmir | 8,70,451 | 7,06,991 | 5,17,436 |
| 13 | Jharkhand | 27,52,731 | 22,86,356 | 16,87,611 |
| 14 | Karnataka | 29,64,726 | 24,40,957 | 18,33,519 |
| 15 | Kerala | 1,77,165 | 1,18,132 | 85,352 |
| 16 | Ladakh | 24,785 | 22,122 | 17,377 |
| 17 | Lakshadweep | 142 | 35 | |
| 18 | Madhya Pradesh | 56,92,467 | 50,69,449 | 37,58,313 |
| 19 | Maharashtra | 61,23,970 | 53,23,817 | 38,53,643 |
| 20 | Manipur | 28,397 | 18,286 | 11,989 |
| 21 | Meghalaya | 1,52,783 | 1,06,063 | 71,301 |
| 22 | Mizoram | 30,317 | 23,125 | 14,357 |
| 23 | Nagaland | 11,990 | 8,968 | 6,332 |
| 24 | Odisha | 36,16,441 | 30,86,143 | 23,46,795 |
| 25 | Puducherry | 22,079 | 15,801 | 10,883 |
| 26 | Punjab | 17,46,448 | 15,14,820 | 11,65,692 |
| 27 | Rajasthan | 45,06,184 | 39,70,690 | 29,27,166 |
| 28 | Sikkim | 27,035 | 23,122 | 16,480 |
| 29 | Tamil Nadu | 17,04,537 | 14,07,880 | 10,55,235 |
| 30 | Telangana | 14,56,226 | 12,10,448 | 8,64,871 |
| 31 | Tripura | 3,25,000 | 2,64,186 | 2,15,688 |
| 32 | Uttar Pradesh | 1,63,14,369 | 1,45,48,273 | 1,10,25,560 |
| 33 | Uttarakhand | 7,85,978 | 6,73,306 | 5,04,730 |
| 34 | West Bengal | 28,36,714 | 23,95,565 | 18,75,716 |
| | Total | 7,35,71,965 | 6,39,41,718 | 4,78,36,18 |

- The scheme focuses on rural areas and prioritizes marginalized sections of society, including SC, ST, BPL, women, and minorities.
- 7.35 crore candidates were enrolled, 6.39 crore were trained, and 4.78 crore were certified under the PMGDISHA scheme. The scheme initially aimed to reach 6 crore people in rural areas.
- Over one crore women have been certified under this scheme.

**2.National Digital Literacy Mission**: Focuses on empowering citizens with essential digital skills to improve employability. Based on the ASER 2023 report and other relevant data, here is a table summarizing the percentage of youth lacking digital literacy across various states in India. The data focuses on youth aged 14-18 years and highlights the gaps in digital skills:

| State | Percentage of Youth Lacking Digital Literacy |
|---|---|
| Andhra Pradesh | 45% |
| Arunachal Pradesh | 52% |
| Assam | 48% |
| Bihar | 60% |
| Chhattisgarh | 50% |
| Goa | 35% |
| Gujarat | 40% |
| Haryana | 30% |
| Himachal Pradesh | 38% |
| Jharkhand | 55% |
| Karnataka | 32% |
| Kerala | 28% |
| Madhya Pradesh | 58% |
| Maharashtra | 36% |
| Manipur | 50% |
| Meghalaya | 49% |
| Mizoram | 47% |
| Nagaland | 53% |
| Odisha | 54% |
| Punjab | 29% |
| Rajasthan | 42% |
| Sikkim | 34% |
| Tamil Nadu | 31% |
| Telangana | 39% |
| Tripura | 46% |
| Uttar Pradesh | 57% |
| Uttarakhand | 41% |
| West Bengal | 37% |

The data indicates that there are significant disparities in digital literacy among youth across different states. States like Bihar and Jharkhand show higher percentages of youth lacking digital skills, while states like Haryana and Punjab have relatively lower percentages. This highlights the need for targeted interventions to improve digital literacy, particularly in states with higher gaps.

**3.Skill Development Programs:** The National Skill Development Corporation (NSDC) offers vocational training tailored to meet industry demands for digitally skilled workers.

These efforts are complemented by NGO-led initiatives like "Campus to Corporate Careers," which provide advanced technical training for underprivileged youth.

Despite these initiatives, several challenges persist:

- **Regional Disparities**: Urban areas benefit more from digital infrastructure than rural regions. Causes of Regional Disparities:

| Cause | Description |
|---|---|
| Inadequate Infrastructure | Lack of training centers, modern equipment, and qualified trainers in rural and backward regions. |
| Supply-Demand Imbalance | Insufficient training opportunities compared to the growing workforce; only 7 million trained annually. |
| Low Employability Rates | Mismatch between education and industry requirements; only 50% of graduates are employable. |
| Fragmented Ecosystem | Multiple ministries running uncoordinated schemes, leading to inefficiencies and overlaps. |

| | |
|---|---|
| Social Stigma | Vocational training perceived as inferior to traditional academic education, reducing participation rates. |
| Limited Industry Linkages | Weak collaboration between industries and training institutions; only 16% of firms offer in-house training. |

Solutions to Address Disparities

| Solution | Description |
|---|---|
| Enhancing Infrastructure | Establish more skill centers in underserved areas with modern equipment and qualified trainers. |
| Strengthening Industry Linkages | Foster partnerships between industries and training institutions to align skills with market demands. |
| Increasing Awareness | Launch campaigns to reduce stigma around vocational education and promote success stories of skilled workers. |
| Expanding Government Schemes | Tailor programs like PMKVY to address specific regional needs, focusing on marginalized groups like women. |
| Regular Assessment | Continuously update curricula to match technological advancements and industry requirements. |
| Integrating with Existing Programs | Link skill development with schemes like MGNREGA to provide incentives for acquiring relevant skills locally. |

**Key Observations**

1. States with better industrial bases (e.g., Maharashtra, Tamil Nadu, Gujarat) have more robust skill development programs, while underdeveloped states (e.g., Bihar, Jharkhand) lag behind.
2. Urban areas benefit disproportionately from skill training due to better infrastructure and access to resources.
3. Women, minorities, and rural youth remain underrepresented in skill development initiatives.
4. Regional disparities in skill development programs pose a significant challenge to India's economic growth and social equity goals. By addressing these disparities through targeted interventions—such as infrastructure enhancement, industry collaboration, awareness campaigns, and tailored government schemes—India can create a more inclusive workforce that meets the demands of a dynamic job market.
5. This report highlights the urgent need for coordinated efforts among stakeholders—government, private sector, and civil society—to bridge the gap in skill development across Indian states effectively.
    - **Gender Gap**: Women face barriers such as limited access to technology and societal constraints.

| Category | Percentage (Women) | Percentage (Men) | Source |
|---|---|---|---|
| Digital Literacy (Overall) | 49.60% | 68.50% | Journal of Applied Biology & Biotechnology Vol. 12(4), pp. 76-80, Jul-Aug, 2024 |
| Smartphone Ownership | 19.8%/ 29% | 43.7%/ 62% | ASER 2023, Journal of Applied Biology & Biotechnology Vol. 12(4), pp. 76-80, Jul-Aug, 2024 & Down to Earth |
| Internet Access | 25% | 49% | Journal of Applied Biology & Biotechnology Vol. 12(4), pp. 76-80, Jul-Aug, 2024 |
| Use of Mobile Phones for Financial Transactions | 9% | 16% | Journal of Applied Biology & Biotechnology Vol. 12(4), pp. 76-80, Jul-Aug, 2024 |
| Digital Literacy (ASER 2023) | 89.80% | 94.70% | |
| Ever Used the Internet | 42% | 62% | DW – In Focus |

- **Skill Mismatch**: Many graduates lack foundational skills required for modern workplaces. Only 42.6% of Indian graduates are employable due to a skills gap, marking a decrease from 44.3% in 2023. The primary cause is a mismatch between employer needs and graduate skills, with a particular lack of non-technical skills like communication, problem-solving, and creativity.
- **Poverty**: High poverty rates limit access to digital tools and training programs in rural areas.

**The way forwards**: To maximize the potential of digital literacy for employment generation:

Improve internet connectivity and access to affordable devices in rural areas.

- **Expand Infrastructure**: Tailor skilling programs for women to bridge the gender gap.
- **Promote Gender Inclusion**: Re-skill half of the existing workforce with advanced digital competencies by 2030.
- **Public Private Partnerships**: Collaborate with private firms to design industry-relevant training programs.
- **Integrate Digital Literacy in Education**: Embed ICT skills into school curricula to prepare students for future job markets.

**Employment Generation in The Indian Context Based on Recent Insights:**

**1. National Employment Policy**

- Implement a comprehensive National Employment Policy to integrate and streamline various employment schemes across ministries, enhancing coordination and efficiency.

**2. Incentives for Hiring**

- Introduce tax incentives for businesses that hire new employees, such as deductions for new hires, to stimulate job creation.

**3. Focus on Labor-Intensive Sectors**

- Provide targeted support for sectors like construction, textiles, and tourism that are known for high employment potential. This can include synchronizing tariff structures and promoting exports.

**4. Empowering Rural Youth**

- Launch rural internship programs for graduates to utilize local talent in addressing workforce gaps, thereby enhancing rural employment opportunities.

**5. Increasing Female Workforce Participation**

- Develop initiatives such as dormitories and childcare facilities in industrial areas to support women in the workforce, alongside gender-sensitive employment policies.

**6. Tapping Global Job Markets**

- Establish an International Mobility Authority to facilitate overseas job opportunities for Indian youth, including training in global skills and languages.

**7. Strengthening MSMEs**

- Prioritize the growth of Micro, Small, and Medium Enterprises (MSMEs) through financial support and ease of doing business reforms, as they contribute significantly to job creation.

**8. Upskilling Initiatives**

- Invest in upskilling programs like the PM Kaushal Vikas Yojana to align workforce skills with market demands, particularly in high-growth sectors such as IT and healthcare.

**9. Promoting Entrepreneurship**

- Support first-time entrepreneurs from marginalized communities with access to loans and training programs, fostering a culture of entrepreneurship that can lead to job creation.

**10. Investment in Infrastructure**

- Enhance infrastructure development to support industrial growth and create jobs in construction and related sectors.

These strategies aim to leverage India's demographic dividend while addressing existing skill mismatches and fostering an inclusive employment ecosystem. Implementing these measures effectively could significantly boost job creation across various sectors in India.

**Conclusion**

Digital literacy is no longer optional; it is a prerequisite for economic participation in the 21st century. By addressing skill gaps and promoting inclusive access to technology, India can unlock significant employment opportunities across sectors. With coordinated efforts from the government, private sector, and civil society, India can transform its workforce into a digitally empowered engine of growth. **Only 38% of households in India are digitally literate**. In urban areas, digital literacy is relatively higher at 61% as compared to just 25% in rural areas. he digital divide in rural India is stark, with only 31% of the rural population using the internet compared to 67% in urban areas. Among the poorest 20% of households, merely 2.7% have access to a computer, and 8.9% to the internet. Digital literacy is essential for economic participation in the modern world, yet significant disparities exist between urban and rural populations in India. Addressing these gaps through inclusive access to technology can unlock vast employment opportunities, thereby transforming the workforce into a digitally empowered engine of growth. Digital literacy serves as a fundamental catalyst for

employment generation, particularly in a rapidly evolving job market. As industries increasingly pivot towards technology-driven operations, the demand for digitally skilled workers has surged, necessitating a workforce adept in areas such as data analysis and artificial intelligence. In India, where a significant proportion of the youth lacks basic digital competencies, addressing this skill gap is imperative to unlocking vast employment opportunities across various sectors. Moreover, enhancing digital literacy not only fosters individual employability but also stimulates economic growth by enabling broader participation in the digital economy. Ultimately, the integration of digital skills into educational frameworks and vocational training programs will be essential for equipping the workforce to meet the challenges of the 21st century.

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