AI LITERACY IN INDIA: THE PRESENT AND FUTURE

Dr. Kirtikumar R. Pimpliskar

Associate Professor,
Department of English,
Anjuman -I-Islam's
Akbar Peerbhoy College of Comm. & Eco.,
M. S. Ali Road, Grant Road, Mumbai-400008
drkirtikumar358@rediffmail.com, 8779971983/9890588749

Abstract

Artificial Intelligence (AI) is a transformative force reshaping various sectors, including agriculture, healthcare, finance, and manufacturing. As India positions itself as a rapidly growing economy, integrating AI into education is essential for fostering mass AI literacy. This involves moving beyond the misconception that AI is solely for tech sectors, and recognizing its impact across all fields. To achieve widespread AI literacy, educational institutions must incorporate AI fundamentals into their curriculums, emphasizing ethical and societal implications. Upskilling the workforce through flexible learning opportunities is crucial, especially in bridging the rural-urban divide in AI education. Collaborative efforts between industry and government are necessary to promote AI training and research, ensuring that India remains competitive on the global stage. Ultimately, mass AI literacy is vital for India's future as a leader in innovation and technology.

To achieve mass AI literacy in India, it is essential to integrate foundational AI concepts into the educational curriculum at both school and college levels. Early exposure to AI will enable students to build a robust understanding that supports lifelong learning. Curriculum developers must expand their focus beyond basic programming skills to encompass experiential learning, ethical considerations, and the societal implications of AI technologies. This holistic approach will prepare students not only to navigate the technological landscape but also to engage thoughtfully with the challenges and opportunities presented by AI in their future careers.

Keywords: *Artificial Intelligence, Education, Industry, Upskilling, workforce*

"Mass AI literacy is indispensable to making India a global innovator and tech leader. A collective effort today will determine India's place on the world AI map tomorrow." Nagesh Singh, Chairman of the Edunet Foundation.

Artificial Intelligence (AI) has become an essential part of our daily lives, often without us even realizing it. From the tailored recommendations we get on streaming services to the voice-activated virtual assistants helping us organize our lives, AI is all around us. It's in our phones, our cars, our workplaces, and even our homes, shaping industries, driving innovation, and changing how we engage with the world.

Artificial Intelligence, or AI, is a powerful tool changing many areas like farming, HealthCare, banking and manufacturing. In a fast-growing economy like India's including Ai in education is crucial to help everyone understand it better. People often think Ai is just for tech jobs, but it affects all kinds of work. Schools need to teach basic AI concepts and discuss its effects on society and ethics. It's also important to help people update their AI related skills, especially to support in rural areas catching up with cities. Companies and government should team up to enhance AI in education and research. This collaboration will help India stay competitive globally. Understanding Ai is essential for India to lead in innovation and technology in the future.

Numerous studies have demonstrated the benefits of AI in education. Blikstein (2018) explores the promises and challenges of using AI systems in educational settings. The author emphasizes that AI-powered tools can enhance student engagement, motivation, and learning outcomes. There's need to discuss the positive impact of AI on student achievement, knowledge retention, and critical thinking skills.

The New Education Policy (NEP) has clearly recognized how important artificial intelligence and AI education are in today's world. To bring India's education system up to speed for the 21st century and prepare students for a world that relies on AI, the policy strongly stresses the need to provide key technical skills at every level of education. Starting from their early school years, kids will be introduced to essential skills like digital literacy, coding, and computational thinking through modern subjects such as Artificial Intelligence and Design Thinking. Plus, undergraduate programs will cover topics like artificial intelligence, 3-D machining, big data analysis, and machine learning, helping to develop professionals ready for today's job market. All universities will also offer master's and doctoral programs in foundational areas like Machine Learning. Also, colleges might offer specialized training for entry-level roles in the AI value chain, focusing on tasks like data annotation, image classification, and speech transcription. Dr. Kasturirangan, who led the NEP drafting committee, mentioned to PTI, 'These initiatives are critical for building 21st-century skills. Education is changing to

prepare young people for today's challenges, which include communication, creativity, and problem-solving.' What's more, to make India a leading hub for disruptive technologies, the National Research Foundation (NRF) aims to promote quality research in science and technology. With AI becoming more relevant and accessible, there's a strong focus on improving research in this area. A three-part strategy has been set up to guide AI research, which includes (a) boosting core AI research, (b) developing and applying research aimed at practical solutions, and (c) starting international collaborations to address global challenges in sectors like healthcare, agriculture, and climate change using AI.

There's an urgent need to understand AI's transformative role across sectors such as agriculture, healthcare, finance, and manufacturing, advocating for the integration of AI education into school and college curriculums. The need for upskilling the workforce, addressing rural-urban divides, and fostering industry-government collaboration was emphasized as essential for India's competitive edge in the global AI landscape. Ultimately, the collective efforts towards mass AI literacy are deemed crucial for positioning India as a leader in the future of work.

FUTURE OF AI IN INDIA

The NEP-2020 aims to address the digital divide by promoting equal access to technology-driven education. It acknowledges that disparities in technology resources can widen educational inequalities. The policy underscores the importance of offering all learners, regardless of their socioeconomic status or geographic location, equal access to digital tools and the advantages of technology integration.

To help everyone in India understand AI, it is crucial to start teaching AI basics in schools and colleges. Schools must introduce students to AI concepts early to build a lifelong learning foundation. Curriculum planners should go beyond simple programming and incorporate lessons on practical, ethical, and social aspects of AI. Colleges and universities also need to change quickly by integrating AI with social sciences, business, and humanities. This prepares students with technical skills, ethical awareness, and the capacity to handle social challenges related to AI. AI understanding has become essential for future leaders in various professions. Promoting critical thinking will enable students to be responsible creators and informed users of AI systems. But formal education alone won't bridge India's skills gap. The vast workforce across different industries requires immediate specialized training. Vocational training, certifications, and AI boot camps are necessary. Professional courses should offer flexible, convenient ways to learn AI skills without disrupting current jobs. Industry-specific certification courses and boot camps will significantly enhance skills and employability, making India's workforce globally competitive. A major challenge is ensuring access to quality AI education beyond urban areas. Urban regions have better access to AI education, while rural and semi-urban areas lag far behind in these developments.

As AI continues to integrate into every aspect of our lives, a new kind of literacy is needed - AI literacy. In a time where AI is not just a tool but a powerful societal force, understanding AI goes beyond just computer experts and data analysts. It's increasingly important for everyone.AI literacy isn't about making everyone an AI expert. It's about giving people the knowledge and skills to understand, use, and interact with AI responsibly and effectively. It's about empowering individuals to make informed decisions about AI technologies, recognize their impacts, and navigate the ethical dilemmas they bring.

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