



PROSPECTS OF ARTIFICIAL INTELLIGENCE (AI) AND PERSONALIZED LEARNING IN INCLUSIVE EDUCATION INTEGRATED TO THE NATIONAL EDUCATION POLICY (NEP) - 2020

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Chief Editors

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Dr.P.V.Nandhini | P.Divya Bharathi**



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THE IMPACT OF BUILDING TEACHER AI LITERACY AS EMPHASIZED BY NEP 2020

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Abstract

The integration of Artificial Intelligence (AI) in education has emerged as a transformative force influencing teaching methodologies, assessment practices, and learning outcomes. The National Education Policy (NEP) 2020 strongly advocates the use of emerging technologies, including Artificial Intelligence, to enhance the quality, equity, and accessibility of education in India. In this context, teacher AI literacy has become a crucial factor in the successful implementation of technology-enabled education. This paper examines the concept of teacher AI literacy, its significance under NEP 2020, and the role of institutional and policy frameworks in fostering AI competencies among teachers. The study highlights the challenges associated with building AI literacy and proposes strategic measures to strengthen teacher preparedness for an AI-driven education ecosystem.

Keywords: *Teacher AI Literacy, Impact, NEP 2020, AI in Education, Digital Pedagogy.*

Introduction

Artificial Intelligence has significantly influenced various sectors, including education, by enabling personalized learning, intelligent assessment systems, and data-driven decision-making. The Indian education system, through the National Education Policy (NEP) 2020, recognizes the need to integrate AI and digital technologies to make education more inclusive and future-oriented. However, the effective adoption of AI in education depends largely on teachers' ability to understand and utilize AI tools appropriately. Teacher AI literacy is essential for translating policy objectives into classroom practices. Without adequate AI competencies, teachers may face difficulties in adopting AI-based tools, thereby limiting the potential benefits of technology integration envisioned by NEP 2020. This paper aims to analyse the importance of building teacher AI literacy as a foundation for successful educational transformation.

Concept of Teacher AI Literacy

Teacher AI literacy refers to the ability of educators to understand, evaluate, and apply Artificial Intelligence tools and concepts in educational settings. It encompasses not only

technical knowledge but also pedagogical and ethical awareness. The key components of teacher AI literacy include:

- Basic understanding of AI concepts and applications
- Ability to use AI-based educational platforms and tools
- Awareness of ethical, legal, and data privacy concerns
- Critical evaluation of AI-generated data and content
- Integration of AI into teaching-learning and assessment processes

AI-literate teachers can effectively guide students in navigating AI-enabled learning environments while ensuring responsible and meaningful use of technology.

NEP 2020 and the Emphasis on Teacher AI Literacy

The National Education Policy 2020 places strong emphasis on the use of technology to improve educational outcomes. The policy proposes the establishment of the National Educational Technology Forum (NETF) to facilitate research, innovation, and the exchange of ideas related to educational technology, including AI. NEP 2020 highlights continuous professional development (CPD) for teachers, encouraging the integration of digital and AI competencies into teacher education programmes. The policy also stresses multidisciplinary learning, computational thinking, and the use of advanced technologies, all of which require teachers to possess foundational AI literacy. By emphasizing capacity building, NEP 2020 positions teachers as key agents in implementing AI-driven educational reforms.

Impact of AI Literacy on Teachers and Students

The impact of Artificial Intelligence (AI) literacy on teachers and students is profound and multidimensional, influencing pedagogical practices, learning outcomes, professional competencies, and ethical awareness within the education system. As emphasized by NEP 2020, the integration of emerging technologies can be effective only when educators possess adequate AI literacy to guide learners meaningfully.

• Impact on Teacher

AI literacy greatly improves the professional capabilities of teachers. Teachers who are AI-literate are better positioned to incorporate intelligent technology into teaching and learning. AI-powered tools such as adaptive learning systems, automated grading systems, and learning analytics dashboards enable teachers to track student learning more accurately and make informed pedagogical choices.

Moreover, AI literacy minimizes teachers' technology resistance by increasing their confidence and familiarity with technology. Teachers develop the skill to critically assess AI-produced content instead of accepting it blindly. This critical engagement ensures that technology is leveraged to support pedagogical goals and not substitute the teacher's professional judgment.

AI literacy also helps teachers develop professionally. Teachers who are AI-aware are more likely to develop a lifelong learning approach and participate in technology-mediated academic communities. As per the NEP 2020, AI-literate teachers are better positioned to

implement multidisciplinary and experiential learning approaches, thus improving the overall quality of education.

- **Impact on Students**

From the students' point of view, the role of teacher AI literacy in creating effective learning experiences cannot be overstated. When teachers know how to utilize AI-based tools effectively, students can enjoy customized learning experiences that cater to their individual learning needs, pace, and abilities. AI-based adaptive learning systems enable the identification of learning gaps and offer support to bridge them, thus enhancing academic performance and engagement.

AI-literate teachers can also promote digital and AI literacy among students, preparing them for the future learning and working environment that will be increasingly impacted by automation and intelligent systems. By exposing students to AI applications in a controlled manner, they can develop critical thinking, problem-solving skills, and ethics with regard to technology use.

Moreover, teacher AI literacy can help counter the ill effects of the digital divide. When teachers are aware of AI and digital tools, they can help disadvantaged students by using inclusive approaches and providing equal access to learning opportunities. This is in line with the NEP 2020 vision of promoting inclusive and equitable education.

- **Ethical and Social Impact**

The ethical and social impact of AI literacy in teachers cannot be overstated. Teachers act as role models in instilling good AI practices, including issues of data privacy, bias in algorithms, and academic dishonesty. Through the training of students in ethical AI practices, teachers play a critical role in developing responsible digital citizens.

In addition, AI-literate teachers are able to strike a balance between the efficiency of technology and human values, ensuring that education is student-centered and not technology-led. This approach enhances the trustworthiness of AI-infused education systems and enables the sustainable integration of technology in line with the national policy agenda.

- **Overall Educational Impact:**

In general, the overall impact of AI literacy goes beyond the classroom to shape the effectiveness of institutions and the quality of education. Institutions with AI-literate teachers are better equipped to execute NEP 2020 changes, integrate innovative teaching-learning approaches, and enhance student outcomes. On the other hand, a situation where teachers are not AI-literate can result in inefficient technology use, workload stress, and poor learning experiences.

Therefore, the need to develop AI literacy in teachers is not only a technological imperative but a strategic necessity in the transformation of education in the current digital age.

Framework for Building Teacher AI Literacy Under NEP 2020

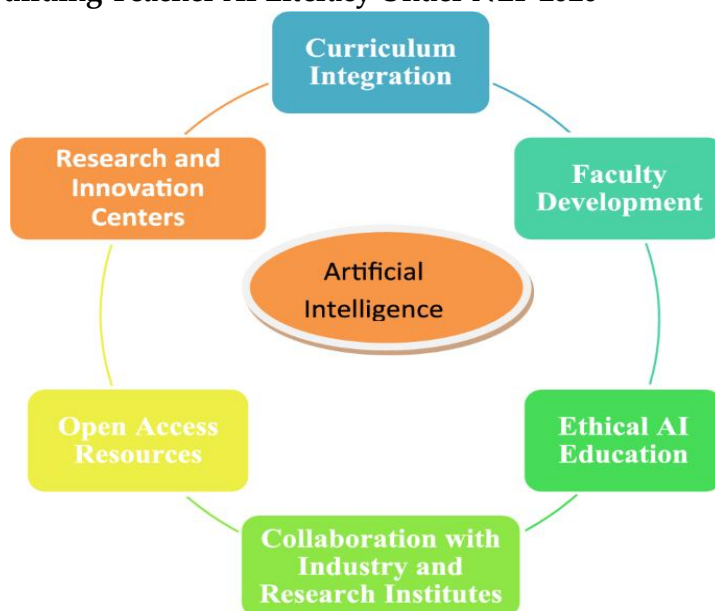


Figure 1

The diagram illustrates a holistic ecosystem for the integration of Artificial Intelligence (AI) in education, with a specific focus on building teacher AI literacy, as emphasized by the National Education Policy (NEP) 2020. At the centre of the framework lies “Artificial Intelligence”, indicating its role as a core enabling technology influencing all dimensions of educational transformation. Surrounding the central component are six interrelated elements that collectively support the effective and sustainable adoption of AI in teaching and learning.

- **Curriculum Integration**

Curriculum Integration represents the systematic inclusion of AI concepts, tools, and applications into teacher education and academic curricula. This component highlights the importance of aligning AI literacy with learning outcomes, pedagogical objectives, and interdisciplinary approaches promoted by NEP 2020. By embedding AI into the curriculum, teachers are better prepared to integrate technology meaningfully into classroom instruction rather than treating it as an add-on.

- **Faculty Development**

Faculty Development emphasizes continuous professional development programmes aimed at enhancing teachers’ AI competencies. This includes training workshops, certification programmes, and hands-on exposure to AI-based educational tools. NEP 2020 stresses the need for empowered and well-trained teachers, and this component reflects the role of structured faculty development in building confidence, competence, and adaptability among educators.

- **Ethical AI Education**

Ethical AI Education highlights the importance of responsible and value-based use of Artificial Intelligence in education. This component focuses on issues such as data privacy, algorithmic bias, transparency, accountability, and academic integrity. Teachers play a critical role in modelling ethical AI practices, ensuring that AI-enhanced education aligns with the humanistic and ethical values emphasized by NEP 2020.

- **Collaboration with Industry and Research Institutes**

This component signifies partnerships between educational institutions, industry, and research organizations. Such collaborations facilitate knowledge exchange, access to emerging AI technologies, real-world applications, and research-driven innovations. Through collaboration, teachers gain practical exposure to AI developments, which strengthens their instructional relevance and research orientation.

- **Open Access Resources**

Open Access Resources refer to freely available digital platforms, online courses, AI tools, research publications, and learning repositories. This component supports equitable access to AI knowledge and training, particularly for teachers in resource-constrained institutions. It aligns with NEP 2020's objective of promoting inclusive and democratized access to quality educational resources.

- **Research and Innovation Centers**

Research and Innovation Centers represent institutional structures that encourage experimentation, innovation, and scholarly inquiry in AI and education. These centres support teacher-led research, pilot projects, and interdisciplinary studies related to AI applications in pedagogy and assessment. They also contribute to evidence-based policy implementation and continuous improvement in teaching practices.

Strategies for Strengthening Teacher AI Literacy

- Incorporating AI literacy modules in pre-service and in-service teacher education
- Establishing institutional AI training centres and digital laboratories
- Policy-level funding and structured implementation of NEP 2020 initiatives
- Collaboration with EdTech organizations and industry experts
- Ensuring inclusive access to AI training for teachers in rural and underserved areas

Conclusion

Developing teacher AI literacy is imperative for the achievement of the goals of NEP 2020 and for ensuring the successful integration of Artificial Intelligence in education. AI-capable teachers will be able to improve the quality of teaching, inspire the ethical use of technology, and prepare students for the challenges of the digital age. The framework shows that the successful integration of Artificial Intelligence in education is not the responsibility of one individual or department but the collective responsibility of all. Improving institutional frameworks and professional development will be critical in developing AI-ready teachers.

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