



ARTIFICIAL INTELLIGENCE IN INDIAN EDUCATION: A STEP TOWARDS PERSONALIZED AND INCLUSIVE LEARNING

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Abstract: The main purpose of this paper is to examine the transformative role of Artificial Intelligence (AI) in reshaping the Indian Education System, with a focus on promoting personalized and inclusive learning experiences. As Ministry of Education (MoE) in India is taking major steps in the implementation of artificial intelligence in University/Colleges, Schools, Institutions, and various E-Learning Platforms to meet the demands of the 21st century. AI Technologies like adaptive learning systems, AI based assessments, virtual teaching assistants are now slowly getting integrated into the classrooms and digital platforms of School, University/Colleges, Institutions. Artificial Intelligence is also helping to ease the learning experience for disabled and underprivileged students and understanding their needs and problems and designing the curriculum according to their needs. This Paper identifies both opportunities and challenges of AI implementation including Infrastructural gaps, Fundings, Teachers Readiness, Ethical Considerations, Policies designed by the government for AI Implementation in education sector. AI can make learning more Accessible, Equitable, and Effective across India.

Keywords: Artificial Intelligence, Indian Education System, AI Technologies, Policies by the Government of India, MoE.

1. INTRODUCTION

The quick implementation of AI technologies are reshaping various sectors around the world one of those sector is the Education Sector more specific the Indian education sector managed by Ministry of Education (MoE). India is the place where diversity, population and regional disparities present a unique challenge the implementation of AI Technologies transforms the way of teaching across India by the help of AI driven tools which manages and analyze vast amount of student data and adapt accordingly in real time. AI breaks

traditional methods of teaching and learning by fulfilling individual needs, pace, and preference it also supports the assistive technologies that enable multilingual instructions. Due to India being a developing nation that slowly building his resource the gap between urban and rural education in india is wide therefore the Ministry of Education is implementing AI Technologies to improve the rural areas Schools, University/Colleges by implementing the intelligent tutoring system to take them on the same level as whole india and fulfill the Indian education guidelines. The Government of India along with EdTech Startup and Academic Institutions has begin exploring the integration of AI to improve curriculum, automate administrative tasks and support teachers in addressing students need more effectively.

a. THE NEW EDUCATION POLICY OF INDIA (NEP)

The New Education Policy (NEP) was introduced in the year 2020 which made significant changes in the entire education system of india by introducing a credit based multidisciplinary 3 to 4 Years of undergraduate programmers with multiple entries and exits not only that the changes was also made in the schooling system by removing the previous 10+2 pattern of school education with the 5+3+3+4 pattern in the new education policy. The policy provides for mother-tongue or regional language to be taught to students up to Class 5.



Government of India has implemented AI Curriculum at all educational levels and aims to equip students with skills like digital literacy, coding and computational thinking with this new education policy. CBSE (Central Board of Secondary Education) has introduced AI as a subject for students in IX to XII. CBSE has also partnered with IBM and Intel to launch skill building programs which also includes orientation sessions on generative AI CBSE has also developed an AI Facilitators Handbook which provide educators with comprehensive training material and real life examples. AI/M.L./GenAI These Courses are started adding in the new curriculum of IITs, NITs IIITs, IIMs and State Universities.

b. INTEGRATION OF AI POWERED TOOLS

Indian education system serves over 248 million students from diverse socioeconomic, geographic, and linguistic backgrounds therefore to provide good quality education around the nation. The ministry of education introduced (NEP) under the Digital India Campaign in which major changes were made to simplify the pre-existed curriculum and make learning more interactive by integrating AI powered tools and platforms. DIKSHA, NISHTHA, and SWAYAM are the most popular government platform developed in the collaboration with different EdTech startups and organizations to make education more accessible in india.

- I. **DIKSHA:** Diksha (Digital Infrastructure for Knowledge Sharing) is a national platform for school education, an initiative of the National Council for Education Research and Training (NCERT) under the aegis of the Ministry of Education (MoE). Diksha was formally launched by the honorable vice president of india - Shri M. Venkaiah Naidu on (5th September 2017) for students, teachers, and parents. After the launch of diksha it has been quickly adopted by almost all the States, and Union Territories (UT). Diksha was designed to change the learning ecosystem and empower the students to thrive in the 21st century. Diksha is a multilingual platform that supports around 36 languages like English, Hindi, Tamil, Telugu, Marathi e.t.c. so you can choose any language as per your convenience. The National E-Governance Division (NeGD) under the Ministry of Electronics and Information Technology (MeitY) is working to incorporate AI Technology into the existing diksha platform by integrating Personalized Adaptive Learning (PAL) software in the future. After integration of (PAL) the students will have an individual learning experience over the course of the curriculum based on their unique needs, abilities, analyzing their strength and weaknesses to provide customized learning experience.



- II. **NISHTHA:** Nishtha (National Initiative for School Heads and Teachers Holistic Advancement) this program was launched by ministry of education (MoE) in India to improve the quality of school education through integrated teacher training. As per the (NEP 2020) every teacher and head teacher is expected to participated in at least {50hrs} of Continuous Professional Development (CPD) opportunities every year for their

professional development. CPD systematically covers the latest teaching practices like foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, competency-based learning, and other teaching practices like experiential learning, arts, sports, and storytelling based approaches, etc. Recently (National Council of Educational Research and Training) NCERT under the backing of ministry of education (MoE), Department of School Education and Literacy (DSE&L), and Government of India has initiated the Nishtha Integrated Training Program (ITP) 1.0, 2.0, 3.0 online for different stages of school education – Teachers, Head Teachers/Principals and other stakeholders in Educational Management and Administration. The implementation of (ITP) has been started in (CBSE, KVS, NVS, Sainik Schools, and other State/Central Schools).

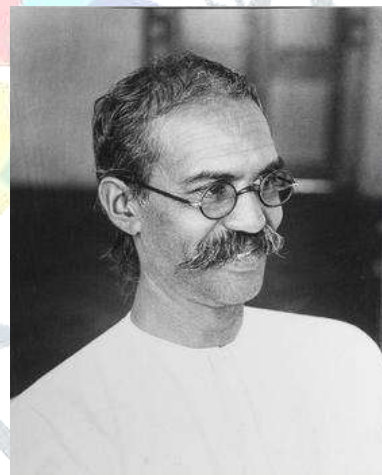
- **NISHTHA 1.0 for Elementary level (Classes I-VIII):** Nishtha 1.0 is a online teacher training program part of the wider Nishtha Scheme. It aims to empower elementary school teachers and principals through integrated training. This program is conducted on Diksha Portal provide courses related to continuous professional development and the implementation of quality education.
- **NISHTHA 2.0 for Secondary level (Classes IX-XII):** Nishtha 2.0 is a online in-service teacher training program, particularly focused on secondary and senior secondary level teachers and school heads. This training program also fall into the main Nishtha Scheme and delivered through the Diksha Portal and aims to provide teachers the skills needed to meet diverse need of the students including social, emotional and psychological needs.
- **NISHTHA 3.0 for NIPUN Bharat (ECCE to Classe V):** Nishtha 3.0 is a teacher training program for school heads and teachers focused on focused on Foundational Literacy and Numeracy (FLN) at the pre-primary and primary levels. It is an online program provided through Diksha Portal aiming to improve teachers skills and learning outcomes particularly in the line of National Initiative for Proficiency in Reading and Understanding and Numeracy (NIPUN Bharat Mission) is a national mission under the Ministry of Education (MoE), Government of India Started in (July 2021). The mission aims to ensure that every child in India attains Foundational Literacy and Numeracy (FLN) at Grade 3 level by the year 2026-27 as per the (NEP 2020).



Nishtha was a well-organized scheme by the Ministry of Education (MoE) but to meet the standards of 21st Century the Ministry of Education is also integrating AI functionality in the Nishtha program through Diksha platform. AI Driven features like self-paced learning and close monitoring for teachers undergoing Nishtha training and also providing teachers AI driven tools to assist them with teaching and assessment, ultimately improving learning outcomes. AI integration is not the final change that has been happening in the Nishtha program Ministry of Education (MoE) is updating this program accordingly to meet the world standards for teaching. One of these Changes is the (Early Childhood care and Education) ECCE it is introduced to enhance the quality of early childhood education and improving the skills of teachers and school heads by teaching them about all necessary information about encompassing care, health, and nutrition of children's from birth to 8 years old. (Dr. Tarabai Modak and Gijubhai Badheka) they were the pioneers of ECCE movement in India they established the first Gram Bal Shiksha Kendra in 1945.

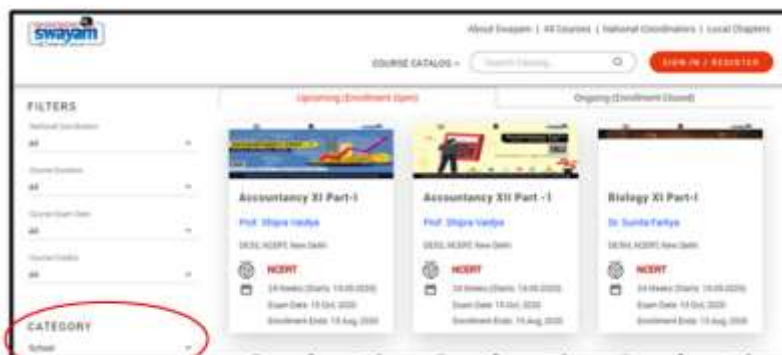


Dr. Tarabai Modak



Gijubhai Badheka

III. SWAYAM: Swayam is a program initiated by the government of India and designed to achieve the three core principles of education access, equity, and quality. Swayam platform facilitates hosting of all the courses taught in the classrooms from class 9th till post-graduation to be accessed by anyone, anywhere at any point of time all the courses are prepared by the teachers in the country and are available free of cost to any learner. More than 1000 specially chosen faculty and teachers from across the country have participated in preparing these courses. These courses are available on swayam portal in 4 quadrants (1) Video lectures (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) online discussion forum for clearing the doubts. There are about 1.5 crore students enrolled in these courses not only that to meet the future needs government is also providing courses on Artificial Intelligence, Machine Learning, Data Science, e.t.c. also to provide more flexible and easy to learn environment efforts are being made to integrate the Swayam platform with Diksha to incorporate its Personalized Adaptive Learning (PAL) AI tool into the swayam portal.



2. METHODS OF INCORPORATING AI IN EDUCATION

The Ministry of Education (MoE) is actively working on the integration of artificial intelligence into the education sector of India through several initiatives and strategies. These efforts aim to modernize education, personalized learning, and improve administrative efficiency. A new Centre of Excellence (CoE) for AI in Education worth ₹500 crores was announced in the budget of 2025 this was a major step taken by the government of India to support the Digital India movement and modernize education in India.

a. CURRICULUM INTEGRATION WITH ARTIFICIAL INTELLIGENCE

The integration of Artificial Intelligence in Indian education system has been started by providing an updated curriculum for School, University/Colleges, and Government & Private institutions by the ministry of education aiming to prepare the students of India for the future by equipping them with essential knowledge related to AI and machine learning concepts.

The CBSE (Central Board of Secondary Education) has introduced AI related courses from class 6th to 12th.

From Class 6th to 8th Introduction of AI is taught in schools by activity-based learning, using games, storytelling, and by introducing them with real life AI Applications like (ChatGPT, Gemini, DeepSeek).

From Class 9th to 10th Students are taught about ethical use of AI and working of AI in the supervision of experts and teachers.

From Class 11th to 12th Students are taught about AI Tools, Machine Learning, Neural Networking, Internet of Things, and AI Project Cycle.

In University/Colleges and other Institution detailed knowledge regarding development, working, and maintaining of AI is taught and hands on small projects are given to students to develop a working AI based application with AI chatbot or other similar stuff.

b. ARTIFICIAL INTELLIGENCE FOR ADMINISTRATIVE EFFICIENCY

The Ministry of Education is working hard to enhance the administrative efficiency in Schools, University/Colleges, and Institutions with the implementation of artificial intelligence. This approach is focused on automating routine tasks, improving decision making and streamlining operations.

AI Driven Dashboard are currently is being used by teachers to track students attendance, grades, and learning patterns.

c. PUBLIC PRIVATE PARTNERSHIP (PPPs)

The Ministry of Education is collaborating extensively with private companies, NGOs, Edtech Startups, and global tech leaders like Intel, Microsoft, IBM, and Google, e.t.c. to implement AI in Education. These PPPs bring technological expertise like training, funding, and innovative AI tools.

Global Tech Leaders like Intel, Microsoft, IBM, and Google they are currently providing multiple AI workshops in india to give students a hands-on experience in AI Technologies and they are also helping ministry of education to develop a strong AI based Curriculum and tools Indian students so they can be future ready.

Platforms Developed for india by EdTech Startups are Discussed in this research paper above.

3. RESULT AND DISCUSSION

The integration of artificial intelligence AI in india is steadily progressing with evidence pointing towards positive impact on personalization but when we compare it with other countries we are far behind from them also in india there are many States that have low literacy rates and are far behind from States like Kerala with 95.3% and Mizoram with 98.2%.

States	Literacy Rate
Uttar Pradesh (UP)	78.2%
Telangana	76.9%
Rajasthan	75.8%
Madhya Pradesh (MP)	75.2%
Bihar	74.3%
Andhra Pradesh (AP)	72.6%

But to bring all the States of India in a same level of education the Ministry of Education (MoE) is working hard to integrate Artificial intelligence into education system under the Digital India campaign and also developing more schools and colleges in under-developed and rural area of india also government is also providing scholarships and financial aids for

students with financial problems or good academic performance. Government also widely promoted “Beti Bacho Beti Padhao” Scheme launched by the Prime Minister (Shri. Narendra Modi) on January 2015. Due to this Campaign which was launched to fight gender bias and discrimination against girls in India by raising awareness and providing welfare schemes for girls. This scheme also helped to spread awareness for girls' safety and access of quality education to reduce the gap of literacy between boys and girls in India.

4. CONCLUSION

AI is generally transforming the world wide teaching practices and India is also running in this race we are far behind in compare to developed nations like United Kingdom (UK), United States of America (USA), China, Japan, Germany because of low budget and resources but we are working hard to catchup with our New Education Policy (NEP) and partnership with private companies to teach and integrate AI technologies in Indian education.

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