

GLOBAL DIMENSIONS OF MULTIDISCIPLINARY RESEARCH AND INNOVATION



Editors

Dr. Partha Ghosh

Dr. Brajesh Kr.Mishra

Dr. Neeta Bagalari

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Dr. Partha Ghosh

Asst. Teacher,SKHS/Naturopath

Dr.Brajesh Kr.Mishra

Associate Professor
Basic Sciences & Humanities
Maharana Pratap Engineering College, Kanpur

Dr.Neeta Baglari

Assistant Professor
Department of Education
Cotton University, Guwahati



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ARTIFICIAL INTELLIGENCE AND THE NATIONAL EDUCATION POLICY (NEP) 2020 – INTEGRATED EDUCATION

Dr.T.MOHANA SUNDARI

Assistant Professor

Department of B.Com (CA)

Nallamuthu Gounder Mahalingam College, Pollachi.

ABSTRACT

The integration of Artificial Intelligence(AI) into education has become a defining feature of 21st-century pedagogical transformation. AI technologies such as intelligent tutoring systems, adaptive learning platforms, and predictive analytics are reshaping teaching and learning into more personalized, data-driven processes. In the Indian context, the National Education Policy (NEP) 2020 envisions leveraging technology, including AI, to foster innovation, inclusivity, and lifelong learning. Artificial Intelligence (AI), encompassing technologies that simulate human cognitive processes such as reasoning, learning, and decision-making, is at the forefront of this transformation. AI applications ranging from intelligent tutoring systems and adaptive learning platforms to chat bots and predictive analytics are reshaping traditional pedagogy into more learner-centered and data-informed models. In the Indian context, the National Education Policy (NEP) 2020 envisions the nation's transition into a global knowledge economy through technology integration and skill-based learning.

Key Words: Artificial Intelligence (AI), National Education Policy (NEP) 2020, Education, Personalized Learning.

I.INTRODUCTION

The rapid development of artificial intelligence (AI) has created new opportunities across a range of industries, including education. Technology integration is emphasized in the National Education Policy-2020 (NEP-2020) of India as a means of transforming the educational system. One crucial area of focus is the application of AI to the NEP-2020. Within the NEP-2020 framework, this research study seeks to assess the advantages and drawbacks of adopting AI in education. The introductory paragraphs of the article provide a summary of the NEP-2020 and highlight its focus on technology integration. The potential applications of AI in education are then discussed, including automated tests, intelligent tutoring systems, and personalized learning. It highlighted how AI might improve academic performance, student engagement, and administrative effectiveness. Under the NEP-2020 framework, there are a lot of opportunities for using AI in education, but there are a lot of challenges as well. Issues with ethics, data security, and privacy, equity, teacher preparation and readiness, and infrastructural limitations are a few of these challenges.

Artificial intelligence (AI) has emerged as a transformative force across various industries, and its potential in education has gained significant attention in recent years. The National Education Policy-2020 (NEP-2020) in India recognizes the importance of technology integration to revolutionize the education system and prepare students for the future. As part of this vision, AI is expected to play a crucial role in reshaping teaching and learning practices. However, the successful implementation of AI in education under the NEP-2020 framework presents several challenges that need to be addressed.

The NEP-2020 sets forth a comprehensive vision for transforming education in [country]. It aims to provide an inclusive and flexible education system that promotes critical thinking, creativity, and problem-solving skills among students. With technology as a key driver, the NEP-2020 emphasizes the integration of digital tools and resources to enhance learning outcomes and improve administrative efficiency (Ministry of Education, 2020)

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II. REVIEW OF LITERATURE

1. AI for Personalized Learning and Adaptive Instruction: The concept of personalized learning and adaptive instruction has gained significant attention in the field of education. AI technologies have the potential to tailor educational content and strategies to individual student needs, thereby enhancing learning outcomes. Baker, Inventado, Labrum, and Blikstein (2019) discuss the use of AI algorithms to analyze student responses and provide personalized feedback. They highlight the effectiveness of intelligent tutoring systems in adapting instructional approaches based on individual progress and mastery.

2. Benefits of AI in Education: 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. Luckin et al. (2016) present a comprehensive review of AI in education and highlight its potential in transforming traditional instructional practices.

3. Ethical Concerns and Transparency: As AI becomes increasingly integrated into education, ethical concerns arise regarding algorithmic biases, data privacy, and transparency. Sawyer et al. (2019) examine the ethical implications of AI in education and advocate for greater transparency and accountability in algorithm design and data usage. They argue for the development of ethical guidelines to ensure fairness and equity in AI-driven educational systems.

4. Equity and Access to AI-Enabled Education: Achieving equity in the implementation of AI technologies in education is a critical challenge. Dhillon (2020) explores the role of AI in addressing educational inequalities and highlights the importance of considering equity concerns in the deployment of AI systems. The author emphasizes the need for policies and

initiatives that bridge the digital divide and provide equal access to AI-enabled educational resources.

5. Teacher Training and Readiness: The successful integration of AI in education relies on the preparedness and training of teachers. Darling-Hammond et al. (2017) discuss the importance of teacher professional development programs to enhance technological skills and pedagogical practices. They emphasize the need for ongoing support and training to ensure teachers can effectively utilize AI tools and adapt to evolving educational landscapes.

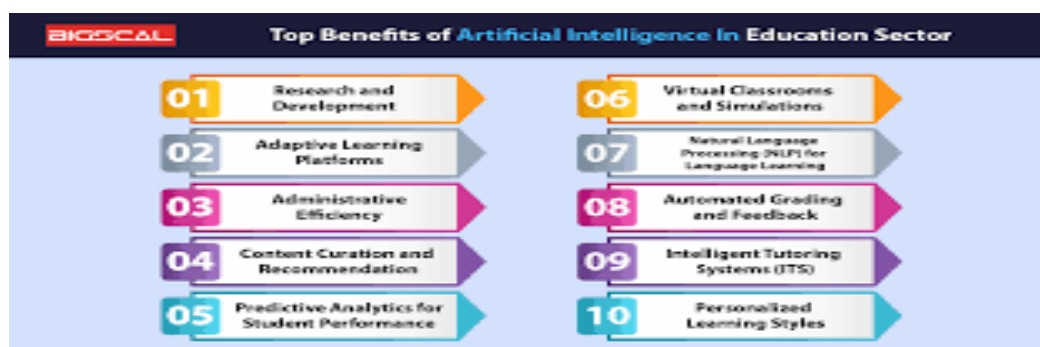
III. AI AND NEP 2020: CONCEPTUAL FRAMEWORK

NEP 2020 introduces several reforms in lower primary education, notably:

- The 5+3+3+4 structure, beginning formal education at age 3.
- Emphasis on Foundational Literacy and Numeracy (FLN) by Grade 3.
- Use of technology-enhanced pedagogy, with AI and data-driven instruction as future goals.

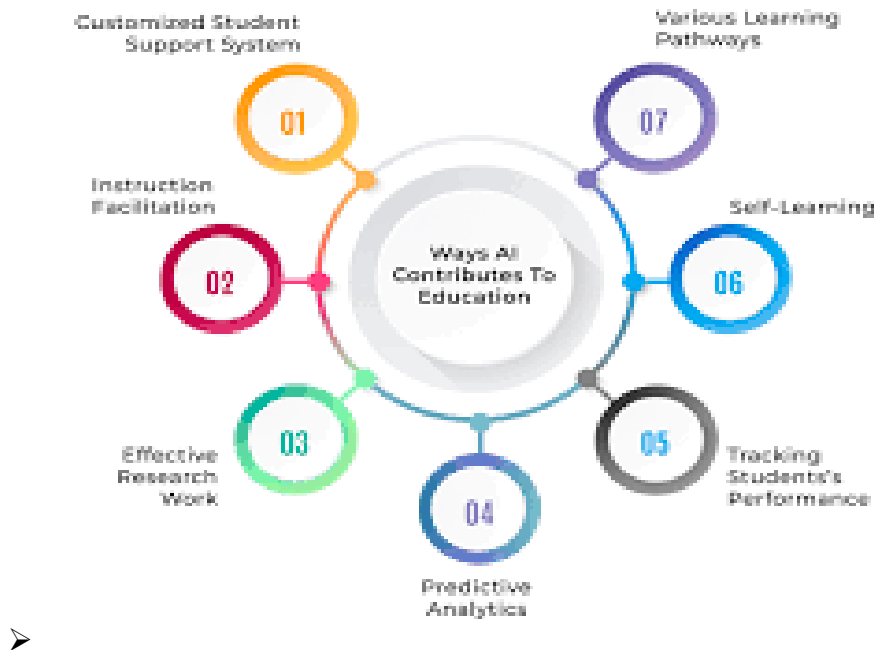
AI can directly support these goals through:

- Adaptive learning platforms like Mindspark, that adjust difficulty levels based on child performance.
- Speech recognition software for early reading skills.
- Gamified learning applications enhancing engagement.



ROLE OF ARTIFICIAL INTELLIGENCE IN INDIAN EDUCATION

- **Smart Content Creation:** AI can generate quizzes, flashcards, and study notes within seconds. This helps teachers save time and provides students with extra resources.
- **Personalized Learning Paths:** AI tracks student behaviour, learning speed, and performance. It then creates customized study plans. This makes learning more effective and enjoyable.
- **3. Automation of Administrative Tasks:** AI can automate routine work like grading assignments, tracking attendance, and scheduling. This allows teachers to focus more on teaching. The adoption of artificial intelligence in education in India is transforming classrooms into smarter spaces.



BENEFITS OF ARTIFICIAL INTELLIGENCE IN EDUCATION

- **Personalized Learning:** AI adjusts lessons to fit each student's needs. This improves understanding and keeps learners motivated.
- **24/7 Tutoring:** AI-powered apps and chat bots are available anytime. Students can get help whenever they need it.
- **Efficient Assessment:** Teachers can save time with automated grading and progress tracking.
- **Curriculum Planning:** AI helps design syllabi based on student performance and interests.

IV. STRATEGIES AND RECOMMENDATIONS FOR ADDRESSING THE CHALLENGES AND OPTIMIZING THE OPPORTUNITIES PRESENTED BY AI INTEGRATION IN EDUCATION

1. **Ethical Frameworks and Guidelines:** Develop and implement ethical frameworks and guidelines specific to AI in education. These frameworks should address issues such as algorithmic transparency, data privacy, bias mitigation, and responsible use of AI technologies. They should provide clear guidelines for developers, educators, and policymakers to ensure ethical AI practices.
2. **Data Privacy and Security Measures:** Establish robust data privacy and security measures to protect student data. This includes implementing strict data protection policies, ensuring data anonymization, obtaining informed consent, and maintaining secure storage and transmission of data.
3. **Equity and Access Initiatives:** Implement initiatives to address equity concerns and ensure equitable access to AI-powered education. This includes bridging the digital divide by

providing infrastructure and connectivity to underserved areas, offering subsidies or grants for digital devices, and promoting inclusive AI designs that consider diverse student needs.

4. **Teacher Training and Professional Development:** Offer comprehensive training and professional development programs for teachers to build their AI competencies. These programs should focus on enhancing teachers' understanding of AI technologies, integrating AI tools into pedagogical practices, and fostering digital literacy and critical thinking skills among educators.
5. **Collaborative Partnerships and Stakeholder Engagement:** Foster collaborations among policymakers, educators, researchers, and technology developers to collectively address challenges and explore opportunities in AI integration. Engage stakeholders in discussions, policy-making processes, and research initiatives to ensure diverse perspectives and effective implementation strategies.
6. **Continuous Monitoring and Evaluation:** Implement mechanisms for continuous monitoring and evaluation of AI integration in education. This includes assessing the impact of AI technologies on student learning outcomes, evaluating the effectiveness of AI-based interventions, and collecting feedback from teachers, students, and other stakeholders for iterative improvements.

V.CONCLUSION

The National Education Policy (NEP) 2020 and Artificial Intelligence (AI) are integrated to create a more personalized, accessible, and technology-driven education system in India. AI serves as a key tool to fulfill NEP's goals by personalizing learning, assisting teachers with administrative tasks and assessment, incorporating AI literacy into the curriculum from class 6, and enabling data-driven decision-making for policymakers. This integration aims to enhance student outcomes and prepare them for the digital future.

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