

Understanding Opportunities and Identifying Drawbacks for Integration of Artificial Intelligence into Educational Settings: A Policy Perspective

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Abstract: The swift progress of AI is causing substantial societal changes that require a thorough national policy response. It is imperative to establish particular regulations for education that address developing opportunities and challenges within the current frameworks. The growing implementation of AI in education highlights the necessity for strong policy frameworks. Indian New Education Policy 2020 underlines the relevance and incorporates AI education at all levels. The conceptual study is based on policy responses and global perspectives, identifying drawbacks and understanding opportunities associated with the incorporation of AI in the field of education. This study not only presents a conceptual model but also provides a path for promoting responsible, ethical, and efficient integration of AI in education.

Keywords: Policy perspectives, NEP 2020, Artificial Intelligence, Education, Drawbacks, Opportunities.

I. INTRODUCTION

“Artificial Intelligence is a booming technological domain capable of altering every aspect of our social interactions” (UNESCO, 2019b). AI is now being used in education to create and assess new teaching and learning approaches. Learning is a crucial aspect of life for everyone, and having a solid education is key to achieving success (Saraswat, 2024). AI has the capacity to tackle significant issues in contemporary education, enhance pedagogical methods, and eventually expedite advancements toward Sustainable Development Goal 4 (UNESCO, 2021). Currently, various educational institutions in different nations are employing AI. The rapid integration of AI (Rayhan Abu, 2023) Education has revolutionized the way instructors, students, parents, and educational institutions see and approach education. According to (Sebesta & Devis, 2023) “AI, in general, poses numerous challenges for educators and students alike, such as academic

integrity, lack of knowledge and training, misinformation, implementation costs, digital inequality, and inclusivity” (OECD, 2020). At the same time, this raises new policy challenges around “trustworthy AI”, encompassing the privacy and security of data (OECD, 2020). That has become a major concern for policymakers and stakeholders.

Most institutions don't have a clear strategy for using AI, but they're developing policies—mainly on academic integrity and teaching use (Sebesta & Devis, 2023). The utilization of AI in education is predominantly overlooked by governments, corporations, and educational institutions globally (Dong & Chen, 2020). Some institutions are adapting existing policies to include the use of AI (Sebesta & Devis, 2023). Ethical utilization of AI necessitates an established legislative framework; otherwise, it may lead to malpractice, plagiarism issues, and exacerbate the digital divide.

This paper aims to know the policy aspect in the incorporation of AI in education based on two research questions-

1. Understanding the possibilities and drawbacks of AI integration from a policy perspective.
2. Analyze the policy responses and global perspectives.

II. RATIONALE OF THE STUDY

Recently, generative AI technologies have become widely available (Ka & Chan, 2023) and are being swiftly integrated into numerous sectors and enterprises. According to Ka and Chan (2023), Educational institutions must build an AI education policy that equips students to use and understand this technology. Thus, students and teachers must understand AI concepts to succeed in these areas. An AI education policy can teach students about the

ethical implications of AI, including prejudice and justice, and the potential outcomes of using AI in academic settings. “The majority of institutions lack official AI strategies but have or will develop policies, primarily around academic integrity and instructional use,” (J. Sebesta & Devis, 2023). This study recognizes that ethical and efficient AI education requires an adaptable educational strategy and a complete policy structure. AI implementation in educational facilities requires policy analysis of potential and challenges. This paper examines the complex interaction between policies and AI in education, presenting theoretical and practical insights. This article evaluates policies' ability to address AI's obstacles and maximize its benefits in education.

III. OPPORTUNITIES OF AI IN EDUCATION

As AI creates a more dynamic workplace, individuals may need to re-skill regularly and may lack the financial means to allocate a sufficient quantity of time to obtain an additional full degree and learn new skills (Klutka, A., n.d.). The advent of AI in education has introduced various opportunities that can be leveraged within the framework of an appropriate policy.

AI technologies, especially adaptive learning systems, have proven to greatly improve personalized learning. These systems examine each student's data to customize educational content, pace, and difficulty based on their individual needs and skills (Sasikala & Ravichandran, 2024). And this is also the aim of educational policies for a developed policy to help students achieve their learning objectives based on their individual needs, to reduce the achievement gap.

Inclusive and accessible learning is another major opportunity for the integration of AI in education. Due to the various types of AI and innovative technologies used in inclusive education, along with their key benefits like enhancing student performance and boosting student interest (Salas-Pilco et al., 2022), AI tools help in inclusive education, like text-to-speech recognition and real-time translation tools. These tools help students overcome disabilities and language barriers. This aligns with global policies such as UNESCO, which eventually expedite progress towards “SDG 4, aimed at ensuring inclusive and equitable quality

education and promoting lifelong learning opportunities for all” (UNESCO, 2021).

Professional development for educators (AbdulRab, 2023) and a decrease in administrative responsibilities offer new opportunities, as teachers frequently devote considerable time to administrative duties. However, numerous AI solutions may alleviate teachers' administrative burdens, allowing them to dedicate more time to students.

Artificial intelligence and sophisticated analytical methodologies possess the capacity to revolutionize public resource allocation by streamlining processes, improving decision-making, and mitigating structural inequities (Yusof et al., 2025), hence assisting policymakers in establishing responsible frameworks.

In addition, lifelong learning and workforce readiness (Emmanuel Dumbuya, 2024) are progressively becoming policy priorities in the context of the fourth industrial revolution (Mahdi Hamad & Jawad, 2024). AI-driven platforms offer (Ivanenkov et al., 2023) Continuous reskill opportunities (Purwono, 2024), customizing curriculum to align with labour market requirements.

IV. DRAWBACKS OF AI IN EDUCATION

Artificial intelligence (AI) offers transformative prospects for education (Magash & Saaida, 2024). It also presents substantial drawbacks that policymakers must confront. The major concern is data privacy and protection. In order to provide personalized educational experiences, AI-driven solutions frequently require students' personal information. This data collection increases the likelihood of privacy violations. Additionally, the lack of transparency regarding the management of student data by technology providers is a cause for concern (Novianti, 2025). Another major threat is algorithmic bias and fairness (Ferrara, 2024). ‘The integration of AI into education raises significant concerns about algorithmic bias and fairness, which can lead to its impact on equity and (Farheen et al., 2025) and underprivileged with marginalized groups (Makwana & Elizabeth, 2022). The question of equality and accessibility, numerous rural families are unable to bear the substantial expenses related to AI tools, digital devices, and internet connectivity. Moreover, a substantial segment of the rural

populace is devoid of digital literacy, constraining their capacity to engage with AI-driven educational resources (Suresh Kumar, 2025). The diminished human interaction, resulting from a potential reduction in face-to-face engagement between students and teachers, which may impede the cultivation of social and emotional skills, essential components of a student's education. A further problem pertains to the quality and accountability of AI systems. The quality of AI algorithms can significantly differ, as can the dependability and accuracy of AI-generated assessments or comments. Misinterpretation of data or deficiencies in AI models might result in students being inaccurately assessed or given erroneous or insufficient information. It is vital to inquire whether an over dependence on AI technologies could adversely affect students' critical thinking, creativity, and problem-solving abilities.

V. POLICY RESPONSES AND GLOBAL PERSPECTIVE ON AI IN EDUCATION

The global use of AI in education (Nur Fitria, 2023) has prompted nations and worldwide organizations to formulate rules addressing the potentialities, hazards, and challenges of regulating AI. International bodies such as UNESCO and OECD have taken the initiative to establish a framework. UNESCO member nations endorsed the Beijing Consensus on AI and Education (UNESCO, 2019a), establishing the inaugural worldwide standards for the responsible integration of AI in education (Etheredge & Etheredge, 2025). Simultaneously, authorities are developing objectives to leverage AI for enhancing access and outcomes, while instituting safeguards about ethics, privacy, and equity. The primary objective is to utilize AI to enhance educational outcomes and efficiency, while equipping students with the competencies required for an AI-centric economy (Etheredge & Etheredge, 2025).

In the European Union, AI in education is governed by strategic regulations. The white paper on Artificial Intelligence, to address the opportunities and challenges of AI, the EU must act as one and define its own way, based on European values, to promote the development and deployment of AI (European Commission, 2020). The EU Artificial Intelligence Act is the first binding rule on AI, ensuring safety, human rights, and European principles, providing policymakers with risk-based

approaches and an international policy landscape (European Parliament, 2024). The EU is enhancing digital transformation in education and training to boost personal fulfilment for all, social cohesion, economic growth, and innovation (European commission, 2021).

The United States is implementing a comprehensive AI Action Plan aimed at attaining global supremacy, emphasizing innovation, infrastructure, and international diplomacy. The initiative seeks to expedite artificial intelligence, safeguard free expression, empower laborers, bolster advanced manufacturing, invest in AI-driven scientific endeavors, and avert misuse or theft (The White House, 2025). Also, the U.S. federal government is investing in 'AI research and development' (Villaret et al., 2021) to address potential and hazards, assuring ethical, legal, and societal considerations in the creation of reliable AI systems (National Science and Technology Council, 2023).

China has formulated strategies to optimize the potential advantages of AI technologies in education. In July 2017, the Chinese State Council unveiled the 'Next Generation Artificial Intelligence Development Plan' (NGAIDP) (IEEE USA, 2018) to establish global leadership in AI by 2030, prioritizing AI-enhanced teaching in primary and middle schools (Yuan, 2024).

The UK's National 'AI Strategy' (Kazim et al., 2021) seeks to leverage AI's capabilities (Ajani et al., 2024) for economic growth (Bithas, 2024), societal advancement, and to tackle 21st-century concerns such as climate change, while promoting a pro-innovation regulatory framework globally (UK Government, 2021). Also, on 29 March 2023, the United Kingdom (UK) government released its AI Regulation White Paper (Scott & Worthington, 2023), outlining a "proportionate and pro-innovation regulatory framework" for artificial intelligence aimed at fostering innovation, identifying and mitigating risks, and positioning the UK as a "AI superpower" (Roberts et al., 2023).

India is experiencing a significant revolution in 'Artificial Intelligence' (Ajani et al., 2024). These initiatives correspond with the objective of Viksit Bharat by 2047, wherein India aims to establish itself as a worldwide AI leader, utilizing advanced technology for economic advancement, governance, and social development (Roadmap & Bharat, 2025). The incorporation of AI (Karan & Angadi, 2025)

India's National Education Policy 2020 (NEP) (Raj, 2025) and the national strategy for responsible AI (NITI Aayog, 2018) Emphasizes inclusive AI adoption.

The UK is exhibiting a global commitment to AI policies, emphasizing societal and economic advancement. Countries like as India, Austria, China, Canada, Germany, the United Kingdom, and South Korea are executing AI initiatives to foster responsible development, economic sustainability, and international collaborations. The United Kingdom seeks to bolster the AI ecosystem, promote economic change, and assure governance alignment. Countries such as Norway, Italy, Brazil, South Korea, France, Ireland, Ukraine, and Mexico are prioritizing AI research, innovation, and workforce development. These strategies illustrate a diverse array of aims and methodologies in influencing the global future of AI.

VI. CONCLUSION

The incorporation of AI in education presents opportunities such as adaptive personalized learning, inclusive and accessible education, evidence-based policymaking, and the cultivation of innovative ecosystems. Conversely, it also poses drawbacks, including data privacy and protection, transparency, algorithmic bias and fairness, equality and accessibility, and the preservation of human interaction. To leverage the opportunities while mitigating the challenges, a structured policy framework for AI in education is essential. All major countries have established regulatory frameworks for artificial intelligence, such as the European Union's AI Act, which enforces binding regulations to ensure safety, human rights, and adherence to European standards. The US AI action plan is designed to achieve worldwide dominance. China further devised AI methods: the United Kingdom national strategic plan and Indian responsible artificial intelligence. Most countries' policymakers strive to utilize AI responsibly, ethically, with a human-centered approach, and ensure fair adoption for all.

This study points out that artificial intelligence in education should be understood as an intersection of policy, ethics, and practice. Future initiatives necessitate enhanced international collaboration, contextually relevant empirical research, and governance frameworks that prioritize teacher autonomy, student rights, and democratic principles

in the realm of digital change. AI can only effectively further the objectives of 21st-century education through balanced, ethical, and inclusive policymaking.

REFERENCE

- [1] AbdulRab, H. (2023). Teacher Professional Development in the 21st Century. *African Journal of Education and Practice*, 9(4), 39–50. <https://doi.org/10.47604/ajep.2237>
- [2] Ajani, O. A., Gamede, B., & Matiyenga, T. C. (2024). Leveraging artificial intelligence to enhance teaching and learning in higher education: Promoting quality education and critical engagement. *Journal of Pedagogical Sociology and Psychology*. <https://doi.org/10.33902/jpsp.202528400>
- [3] Bithas, M. (2024). Leveraging AI for Economic Growth: Opportunities and Limitations. 13, 2024. <https://doi.org/10.37421/2162-6359.2024.13.762>
- [4] Dong, N., & Chen, Z. (2020). Seldon, A., and Abidoye, O.: The fourth education revolution: will artificial intelligence liberate or infantilise humanity. *Higher Education*, 80(4), 797–799. <https://doi.org/10.1007/s10734-020-00506-5>
- [5] Emmanuel Dumbuya. (2024). Lifelong learning models for workforce readiness in emerging economies. *International Journal of Science and Research Archive*, 13(2), 2815–2817. <https://doi.org/10.30574/ijrsra.2024.13.2.2486>
- [6] Etheredge, L. M., & Etheredge, L. (2025). AI in Education: Global Trends and Country-by-Country Analysis (2018-2023). <https://www.researchgate.net/publication/389043586>
- [7] European Commission. (2020). On Artificial Intelligence-A European approach to excellence and trust White Paper on Artificial Intelligence A European approach to excellence and trust. https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf.
- [8] European commission. (2021). Resetting education and training for the digital age. https://education.ec.europa.eu/sites/default/files/document-library-docs/deap-communication-sept2020_en.pdf
- [9] European Parliament. (2024). The AI Act was published in the EU's. In *Official Journal on* (Vol. 12). https://www.europarl.europa.eu/doceo/document/TA-9-2024-0138_EN.pdf

- [10] Farheen, S., Abbas Cheema, A., Samee Ullah, R., & Minhas Bandevali, M. (2025). Equity and Bias in AI Educational Tools: A Critical Examination of Algorithmic Decision-Making in Classrooms. [https://thecrsss.com /index.php /Journal/about](https://thecrsss.com/index.php/Journal/about)
- [11] Ferrara, E. (2024). Fairness and Bias in Artificial Intelligence: A Brief Survey of Sources, Impacts, and Mitigation Strategies. In *Sci* (Vol. 6, Issue 1). Multidisciplinary Digital Publishing Institute (MDPI). <https://doi.org/10.3390/sci6010003>
- [12] IEEE USA. (2018). IEEE-USA | 2001. <http://www.ieeeusa.org>
- [13] Ivanenkov, Y. A., Polykovskiy, D., Bezrukov, D., Zagribelnyy, B., Aladinskiy, V., Kamyra, P., Aliper, A., Ren, F., & Zhavoronkov, A. (2023). Chemistry42: An AI-Driven Platform for Molecular Design and Optimization. *Journal of Chemical Information and Modeling*, 63(3), 695–701. <https://doi.org/10.1021/acs.jcim.2c01191>
- [14] Ka, C., & Chan, Y. (2023). A comprehensive AI policy education Framework for university teaching and learning.
- [15] Karan, B., & Angadi, G. R. (2025). Understanding School Readiness Factors in relation to the Incorporation of Artificial Intelligence using TOE Framework: An Empirical Evidence from India. *TechTrends*, 69(1), 38–59. <https://doi.org/10.1007/s11528-024-01020-6>
- [16] Kazim, E., Almeida, D., Kingsman, N., Kerrigan, C., Koshiyama, A., Lomas, E., & Hilliard, A. (2021). Innovation and opportunity: review of the UK’s national AI strategy. *Discover Artificial Intelligence*, 1(1). <https://doi.org/10.1007/s44163-021-00014-0>
- [17] Klutka, A., Ackerly, N. Magda, J. A. (n.d.). ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION Current Uses and Future Applications.
- [18] Magash, T., & Saaida, M. (2024). Article in Review of Artificial Intelligence in Education. <https://doi.org/10.5281/zenodo.14726897>
- [19] Mahdi Hamad, B., & Jawad, M. K. (2024). The Fourth Industrial Revolution: A Historical and Conceptual Review. *Journal of Economics and Administrative Sciences*, 30(141). <http://jeasiq.uobaghdad.edu.iq>
- [20] Makwana, G., & Elizabeth, H. (2022). Challenges for children from the marginalized Indian communities. *VIDYA - A JOURNAL OF GUJARAT UNIVERSITY*, 1(1), 60–67. <https://doi.org/10.47413/vidya.v1i1.109>
- [21] National Science and Technology Council. (2023). National-Artificial-Intelligence-Research-and-Development-Strategic-Plan-2023-Update. <https://bidenwhitehouse.archives.gov/wp-content/uploads/2023/05/National-Artificial-Intelligence-Research-and-Development-Strategic-Plan-2023-Update.pdf>
- [22] NITI Aayog. (2018). National-Strategy-for-Artificial-Intelligence. <https://www.niti.gov.in/sites/default/files/2021-02/Responsible-AI-22022021.pdf>
- [23] Novianti, I. (2025). An Exploratory Study on the Challenges of AI Technology in Education and its Practical Recommendations. *International Journal of Social Science Research and Review*, 8(3), 26–37. <https://doi.org/10.47814/ijssrr.v8i3.2481>
- [24] Nur Fitria, T. (2023). The use of artificial intelligence in education (AIED): Can AI replace the teacher’s role. *EPIGRAM (e-Journal)*, 20(2), 165–187. <https://doi.org/10.32722/epi.v20i2.5711>
- [25] OECD. (2020). Trustworthy artificial intelligence (AI) in education (OECD Education Working Papers, Vol. 218). <https://doi.org/10.1787/a6c90fa9-en>
- [26] Purwono, P. Y. (2024). Is continuous training to re-skilling and up-skilling employees needed by companies? *Jurnal Akuntansi Dan Manajemen*, 21(2), 149–164. <https://doi.org/10.36406/jam.v21i2.1715>
- [27] Raj, S. B. (2025). Pathways to inclusive higher education: learnings from India’s National Education Policy 2020. *Nordic Journal of Studies in Educational Policy*, 11(1), 82–92. <https://doi.org/10.1080/20020317.2024.2382376>
- [28] Rayhan Abu, R. R. R. S. (2023). Revolutionizing Education: The Power of Artificial Intelligence (AI). <https://doi.org/10.13140/RG.2.2.10716.97924>
- [29] Roadmap, A., & Bharat, V. (2025). India’s AI Revolution.
- [30] Roberts, H., Babuta, A., Morley, J., Thomas, C., Taddeo, M., & Floridi, L. (2023). Artificial intelligence regulation in the United Kingdom: a path to good governance and global leadership? *Internet Policy Review*, 12(2). <https://doi.org/10.14763/2023.2.1709>

- [31] Salas-Pilco, S. Z., Xiao, K., & Oshima, J. (2022). Artificial Intelligence and New Technologies in Inclusive Education for Minority Students: A Systematic Review. In *Sustainability (Switzerland)* (Vol. 14, Issue 20). MDPI. <https://doi.org/10.3390/su142013572>
- [32] Saraswat, D. (2024). Artificial intelligence in education: Transforming learning and teaching. <https://www.researchgate.net/publication/384221135>
- [33] Sasikala, P., & Ravichandran, R. (2024). Study on the Impact of Artificial Intelligence on Student Learning Outcomes. *Journal of Digital Learning and Education*, 4(2), 145–155. <https://doi.org/10.52562/jdle.v4i2.1234>
- [34] Scott, G., & Worthington, H. (2023). Overview of the UK Government's AI White Paper (Vol. 6).
- [35] Sebesta, J., & Devis, V. L. (2023). Supporting instruction and learning through artificial intelligence: A survey of institutional practices & policies.
- [36] Suresh Kumar, J. (2025). Challenges and Opportunities of AI Implementation in Education Systems of Rural India. <https://doi.org/10.5281/zenodo.15689399>
- [37] The White House. (2025). Americas-AI-Action-Plan. <https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf>
- [38] UK Government. (2021). National AI Strategy 1 2 National AI Strategy Presented to Parliament by the Secretary of State for Digital, Culture, Media and Sport. https://assets.publishing.service.gov.uk/media/614db4d1e90e077a2cbdf3c4/National_AI_Strategy_-_PDF_version.pdf
- [39] UNESCO. (2019a). Beijing consensus on artificial intelligence and education. <https://en.unesco.org/themes/ict-education>
- [40] UNESCO. (2019b). Challenges and Opportunities for Sustainable Development Education Sector United Nations Educational, Scientific and Cultural Organization. <https://en.unesco.org/themes/education-policy->
- [41] UNESCO. (2021). AI and education: guidance for policy-makers. UNESCO. <https://doi.org/10.54675/PCSP7350>
- [42] Villaret, M., Alsinet, T., Fernández, C., & Valls, A. (2021). Artificial intelligence research and development.
- [43] Yuan, L. (2024). Where does AI-driven Education, in the Chinese Context and Beyond, go next? In *International Journal of Artificial Intelligence in Education* (Vol. 34, Issue 1, pp. 31–41). Springer. <https://doi.org/10.1007/s40593-023-00341-6>
- [44] Yusof, Z. Bin, Santoso, A., Kartika, D., & Lestari, P. (2025). Reimagining Public Resource Allocation: Insights into AI and Analytical Techniques to Address Governance Challenges in the 21st Century. <https://www.researchgate.net/publication/387763128>