

Fairness by Awareness: Evaluating AI-Powered Learning Resources and Legal Repercussions in India

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ABSTRACT

Artificial intelligence (AI) has grabbed the attention of several groups like students, teachers, policy developers, etc. due to its ability to perform different tasks. AI-powered learning tools offer students personalized feedback, opportunities for flexible learning, and insight into their learning preferences to enhance their meta-cognitive skills. However, concerns about the accuracy of AI-generated information highlight the importance of combining human intelligence and collaborative efforts. This study evaluates the decision-making skills of the four most used AI chatbots Microsoft Copilot, ChatGPT, Claude, and Perplexity to ensure they align with educational objectives. The limitations of these systems highlight the need for strong legal frameworks to ensure ethical AI use in education. Comprehensive regulations are necessary to address these limitations and facilitate the effective integration of AI into India's educational system. This research paper aims to contribute to the ongoing debate about legal regulations for algorithmic decision-making systems by discussing an often overlooked perspective. The educational implications have been made for the stakeholders in AI educational practices.

Keywords: Artificial Intelligence, Decision-making skills, Education, Fairness, and Legal Repercussions

In today's rapidly evolving educational landscape, the integration of Artificial Intelligence (AI) has become massively prevalent, and more and more people are using it faster than ever before (Mohan, 2021). The integration of AI in education has the potential to revolutionize traditional teaching and learning methods, offering personalized learning experiences, streamlining administrative tasks, and enhancing feedback mechanisms (Zaman, 2023). This technology can also empower educators and students through innovative instructional strategies, such as Generative AI, which can personalize learning experiences and facilitate adaptive assessments (Kadaruddin, 2023). AI, based on its capabilities, is divided into three types: Narrow AI, which is designed for specific tasks; Generative AI, which performs human-like tasks; and Super AI, which surpasses human intelligence. Chatbots fall under Narrow AI which

is a software application that engages users in natural, conversational interactions via text and voice, focusing on a particular topic or within a specific domain (Smutný *et al.* 2020).

AI chatbots in education have been widely studied both in terms of their applications (Labadze *et al.* 2023) and their advantages and disadvantages (Georgescu, 2018). The development of chatbots has steadily progressed, moving from information gathering and sharing as recommendation agents to assisting in decision-making (Triparna *et al.* 2021). AI decision-making involves using artificial intelligence to make decisions or take actions by processing data, rules, and other inputs. The process

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generally includes steps such as data collection, preprocessing, analysis, and prediction (Gupta, 2023). Despite the potential of artificial intelligence to significantly improve educational processes, it is necessary to recognize the irreplaceable role of human intelligence (Jarrahi, 2018). Human intelligence brings with it valuable qualities such as critical thinking, adaptability, personal support, and emotional engagement, which AI chatbots often lack (Sidlauskienė *et al.* 2023). Research is needed to emphasize the critical role of human intelligence and illuminate its interaction with artificial intelligence. Bridging this gap in understanding can promote informed decision-making, and ensure the ethical integration of AI into education and adherence to relevant legal frameworks.

Review of Related Literature

AI is fallible, if humans make mistakes, laws will be enforced, but what about artificial intelligence? Are there similar laws for artificial intelligence? (CBSE, n.d.) Advances in artificial intelligence (AI) in India highlight the critical importance of ethical considerations, governance frameworks, and regulatory measures (Marda, 2018). Discussions between policymakers, industry leaders, and researchers will focus on ensuring fairness, accountability, and transparency in AI development, and establishing ethics councils and strategies to address Intellectual Property Rights issues (NITI Aayog 2021). The emphasis on human-machine collaboration is growing, with experts recognizing that AI can make repetitive tasks easier for humans and focus on more innovative and additive activities (Jarrahi, 2018). Although concerns remain about the lack of governance and the need for context-specific frameworks to effectively respond to the ethical challenges of AI, particularly its potential impact on marginalized communities (Global Information Society Watch, 2019). In response, it is strongly recommended to prioritize ethical and human rights in the development of AI, especially in the Indian educational environment, where AI has enormous potential to transform learning and teaching methods (Ramya *et al.* 2019). In addition, regulatory measures, including strong data protection laws, are emphasized to promote accountability and address security, privacy, and governance issues in AI adoption, ensuring that the benefits of AI are

realized while mitigating potential risks (Naithani, 2023). The review of related literature highlights that most studies have addressed critical aspects such as establishing an intellectual property framework, strengthening information management, and ensuring justice and security in the field of artificial intelligence (AI). However, there are still gaps in AI management strategies and understanding of the impact of AI, especially in education. To overcome these knowledge gaps and promote the responsible use of AI, it is necessary to address neglected areas such as AI decision-making and their implications for education.

Research Questions

The following research questions were framed based on the review of related literature:

- ❑ How do the decision-making skills in AI chatbots affect their performance?
- ❑ How do the decision-making skills of AI chatbots impact the educational experience of learners?
- ❑ How comprehensive are the current AI laws in India?
- ❑ How does weak decision-making by AI chatbots relate to the legal repercussions in the Indian education system?

Objectives of the study

The following research objectives were formed to explore the research questions:

- ❑ To assess the decision-making skills of four prominent chatbots: Microsoft Copilot (Bing), ChatGPT, Claude, and Perplexity.
- ❑ To explore the legal repercussions because of weak decision-making skills of AI in the Indian Education System.

Delimitation of the study

The best chatbots for their unique capabilities and user-friendly interfaces are Microsoft Copilot (Bing), ChatGPT, Claude, and Perplexity (Rudolph *et al.* 2023). So, the comparative analysis of the decision-making skills of these four prominent was done, and the legal repercussions of AI usage would be delimited to the Indian context.

Research Design

The exploratory research method was adopted for the study to explore the newness and complexity of the decision-making skills of AI and analyze the potential legal repercussions associated with AI utilization.

Sample

The four AI chatbots, Microsoft Copilot (Bing), ChatGPT, Claude, and Perplexity were selected purposively based on their prominence, availability of data, diversity, relevance to research objectives, and accessibility for the research study. Copilot is capable of providing solutions for almost all fundamental algorithmic problems (Dakhel *et al.* 2023), ChatGPT can outperform humans in basic reasoning and decision-making tests (Wang *et al.* 2023), Claude is specialized in sentiment analysis (Anthropic, 2023) and Perplexity, possesses predictive capabilities, focuses on minimizing linguistic uncertainty.

Research Tools

- (i) To evaluate the inference and decision-making skills of the mentioned AI chatbots, challenging decision-making stumpers were asked. The structured interview was used as a research tool.
- (ii) The systematic review and analysis of government regulations, legal statutes, and policy documents was done to identify the legal repercussions in the field of education.

Data Analysis and Interpretation

The following stumpers were posed to the respective chatbots and then error attribution analysis was conducted as part of the data analysis process to identify the factors contributing to any inaccuracies or shortcomings in their responses:

Four siblings were in a room... John was reading a book. Rohan was playing chess. Rohit was arranging the shelf. What was Aakash doing?

Chatbots	Response given by the chatbot
Copilot	Aakash was not mentioned in any of the activities.
ChatGPT	The information provided does not specify what Aakash was doing.

Claude	Unfortunately, the information provided does not mention what Aakash was doing in the room.
Perplexity	I'm sorry, but the given question does not provide enough information to answer it.

The correct response is "Aakash was playing chess with Rohan". The mentioned Chatbots' algorithms have limitations that can lead to incorrect responses. These limitations include difficulties in understanding context, handling complex scenarios, and recognizing the intent behind a question. They may struggle due to limited or poor-quality training data, as well as algorithmic constraints because of which they failed to identify here that chess cannot be played alone and Aakash must be playing chess with Rohan.

Considering the circumstances surrounding the murder of Mr. Rajvir on a Sunday afternoon, including the wife's claim of reading a book, the butler's statement of taking a walk, the chef's assertion of making breakfast, the maid's declaration of folding clothes, and the gardener's explanation of planting herbs, the question arises: Who is responsible for the crime?

Chatbots	Response given by the chatbot
Copilot	Without concrete evidence, it's challenging to definitively pinpoint the culprit.
ChatGPT	The given statements do not provide enough evidence or clues to identify the perpetrator.
Claude	The given statements from the wife, butler, chef, maid, and gardener only provide alibis or accounts of their activities at the time of the murder. However, these statements alone do not provide enough evidence to implicate or exculpate any particular individual.
Perplexity	I'm sorry, but the given question seems to be a fictional scenario or a puzzle with no actual information or context to provide a solution.

The chef was the murderer as he was making breakfast in the afternoon. Chatbots operate on rule-based logic, which means they interpret information literally. When the chef claims to be making breakfast in the afternoon, the chatbot accepts this statement without naturally understanding the inconsistency of preparing breakfast in the afternoon within the context of the crime timeline. This absence of common sense reasoning in chatbots

results in their inability to intuitively recognize contradictions or implausible scenarios. Insufficient diversity or bias in data may also result in an incorrect response.

I am not alive, yet I can grow,

I am without lungs, but I still need air,

I do not have a mouth, but I need water to survive,

Who I am?

Chatbots	Response given by the chatbot
Copilot	You are a fire.
ChatGPT	The riddle describes a fire.
Claude	Based on the riddle-like clues provided, it seems that you are describing a fire.
Perplexity	The answer to the riddle is an echo.

Here, the responses were different yet the correct response was “clouds”. Differences in chatbot responses may be due to the limitations of their specialized algorithms. Each chatbot works in a specific framework, which may not cover the full complexity of different questions. When given a complex stumper like the one presented, chatbots can struggle to integrate different aspects of the scenario because their algorithms are too specific. Hence, the simple models used by the chatbots may lack the depth and adaptability needed to accurately understand the variation of a situation. The answer of one chatbot can differ from another because it cannot integrate the complex problem presented, highlighting the effect of over-specialization on adaptability and the ability to provide accurate answers in different environments.

It can be concluded from all the responses that the following aspects influence the ability of AI chatbots used in educational settings to make decisions and the parameters of any inaccuracies that may occur:

Table 1: Challenges of AI Chatbot in Decision-making

Parameters	Description
Training Data Quality	Insufficient diversity or bias in data may hinder comprehension of educational concepts.
Algorithm Selection	Inadequate algorithms may struggle with instructional tasks or lack comprehension of nuances.

Model Generalization	Over-specialization limits adaptability to diverse environments; simplistic models may lack complexity for varied inquiries.
Operational Data Quality	Outdated or corrupt data may result in inaccurate responses or misinterpretations.
Operator Understanding	Lack of transparency in AI decisions may lead to skepticism; limited confidence may result in perceived inaccuracies.
Lack of human understanding and context	AI algorithms process data to make predictions based on training but may lack human understanding and context. Human intervention is often necessary.

As human capabilities extend beyond those of AI, humans possess the capability to imagine, anticipate, experience emotions, and make judgments in dynamic situations unlike artificial intelligence, which relies only on available data, so there is a need to integrate Human Intelligence with Artificial Intelligence (AI).

To explore the legal repercussions of weak decision-making skills of AI used for educational purposes *the analysis* of National Strategy for Artificial Intelligence (NSAI) by NITI Aayog, Information Technology Rules, 2011, Digital Personal Data Protection Bill, 2022, Indian Copyright Act, 1957 and the Right to Education Act, 2009, was done. The resulting repercussions are as follows:

Educational Malpractice: Educational malpractice may arise if AI systems with limited decision-making abilities offer inaccurate or detrimental educational advice. This may come under the jurisdiction of Article 21-A ensures the right to education and the violation of rights like the right to education, tort law, etc.

Violation of Student Rights: Legal claims may be brought if AI systems’ poor decision-making causes the distribution of false or biased educational content. The Indian Copyright Act, 1957 may also be violated by the dissemination of inaccurate or prejudiced educational materials if they involve the unauthorized duplication or distribution of copyrighted works.

Regulatory Compliance: AI in education must abide by several laws and guidelines under Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal

Data or Information) Rules, 2011 about protecting students' privacy and instructional content under Section 43A that organizations handling private information about individuals must put forward adequate security measures to guard against illegal access or disclosure and Section 72A that punishes the revelation of information that violates a valid contract, including student personal information and instructional materials.

Intellectual Property Infringement: In the case that poor decision-making by AI systems results in unauthorized utilization or publication of educational materials protected by copyright, rights holders may file a lawsuit and/or claim intellectual property infringement.

Data Privacy Violations: Data privacy violations could arise from AI systems' poor decision-making, which could lead to the improper handling or exposure of students' confidential information, breaking laws like the Digital Personal Data Protection (DPDP) Act which intends to control how organizations process people's data, placing responsibility on data fiduciaries to protect that data and offering redress in the event of a data violation. For violations of data privacy, there may be fines, penalties, and legal repercussions.

Educational Implications

Educational implications for the concerned stakeholders are as follows:

1. Teachers must be aware of AI limitations and adapt their teaching methods accordingly. This includes adjusting the curriculum to address potential inaccuracies and providing professional development opportunities to mitigate negative impacts on student learning experiences to enhance teaching and learning outcomes.
2. Students must develop critical thinking skills to evaluate AI chatbot information by challenging assumptions and verifying data from multiple sources. Fostering resilience and adaptability is crucial for students to navigate situations where AI chatbots may provide inaccurate responses, allowing them to overcome obstacles and continue their education.

3. Administrators play a crucial role in advancing AI technologies in education and are responsible for developing policies to ensure the safe and ethical application of AI chatbots in educational environments, including procedures for student safety and data protection. Administrators can establish evaluation frameworks to assess how well AI chatbots align with student learning objectives, monitoring performance and soliciting feedback from stakeholders to make necessary adjustments.
4. AI Developers play a critical role in enhancing AI algorithms' precision and reliability in learning environments by continuously refining them. This may involve incorporating feedback mechanisms and training AI models on diverse datasets to improve performance. AI developers must consider the ethical implications of AI decision-making errors, prioritizing learner safety and ensuring AI systems' accountability, fairness, and transparency. Collaboration between developers and educators is essential to understanding educators' needs and challenges in integrating AI technologies into the classroom effectively. By working together, they can ensure that AI technologies are developed to support learning objectives and outcomes successfully.

CONCLUSION

A thorough exploration is taking place into the rapidly changing field of Artificial Intelligence (AI) and how it affects education in India. Even though AI is highly developed in many areas, incorrect responses to questions may occur due to various factors, including biased or incomplete educational datasets, inadequate algorithms, overemphasis on specific areas of knowledge, reliance on outdated operational data, limited confidence in the technology by operators, and even intentional manipulation. These issues not only impact the quality of education but also raise concerns regarding legal rights such as Educational Malpractice, Intellectual Property Infringement, Regulatory Compliance issues, and violations of Data Privacy. Therefore, there is an urgent need for

powerful laws and regulations in India, specifically designed to address these challenges within the educational domain. Collaborative efforts among various stakeholders are essential to establish a framework for developing Ethical, Accountable, and Trustworthy AI in education.

REFERENCES

- Anthropic. 2023. Welcome to Claude. Claude. <https://docs.anthropic.com/claude/docs/intro-to-claude>
- CBSE. (n.d.). Artificial Intelligence: Study Material. https://cbseacademic.nic.in/web_material/Curriculum21/publication/srsec/AI_Curriculum_HandbookClassXI.pdf
- Copyright Office Government of India. 1957. The Copyright Act, 1957 (14 OF 1957). <https://www.copyright.gov.in/Documents/Copyrightrules1957.pdf>
- Dakhel, A.M., Majdinasab, V., Nikanjam, A., Khomh, F., Desmarais, M.C. and Jiang, Z.M. 2023. GitHub Copilot AI pair programmer: Asset or Liability? *Journal of Systems and Software*. <https://doi.org/10.1016/j.jss.2023.111734>
- Georgescu, A.A. 2018. Chatbots for Education – Trends, Benefits and Challenges. Questa Soft. <https://www.cceol.com/search/article-detail?id=668455>
- Global Indian Society Watch. 2019. Artificial intelligence: Human rights, social justice and development. https://giswatch.org/sites/default/files/gisw2019_web_intro_0.pdf
- Gupta, S. 2023. Decision Making in AI - Scaler Topics. Scaler Topics. <https://www.scaler.com/topics/artificial-intelligence-tutorial/decision-making-ai/>
- Jarrahi, M.H. 2018. Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision-making. *Business Horizons*, **61**(4): 577–586.
- Kadaruddin, K. 2023. Empowering Education through Generative AI: Innovative Instructional Strategies for Tomorrow's Learners. *International Journal of Business, Law, and Education*.
- Labadze, L., Grigolia, M. and Machaidze, L. 2023. Role of AI chatbots in education: systematic literature review. *International Journal of Educational Technology in Higher Education*. <https://doi.org/10.1186/s41239-023-00426-1>
- Marda, V. 2018. Artificial intelligence policy in India: a framework for engaging the limits of data-driven decision-making. *Phil.Trans.R.Soc.A376:20180087*. <http://dx.doi.org/10.1098/rsta.2018.0087>
- Meit, Y. 2022. The Digital Personal Data Protection Bill, 2022. https://www.meity.gov.in/writereaddata/files/The%20Digital%20Personal%20Data%20Potection%20Bill%2C%202022_0.pdf
- Ministry of Communications and Information Technology. (2011). Information Technology Rules, 2011. [https://www.meity.gov.in/sites/upload_files/dit/files/GSR313E_10511\(1\).pdf](https://www.meity.gov.in/sites/upload_files/dit/files/GSR313E_10511(1).pdf)
- Ministry of Education. 2009. Right to Education Act 2009. https://www.education.gov.in/sites/upload_files/mhrd/files/upload_document/rte.pdf
- Mohan, P. 2021. Artificial Intelligence in education. *Times of India*. <https://timesofindia.indiatimes.com/readersblog/newtech/artificial-intelligence-in-education-39512/>
- Naithani, P. 2023. Regulating Artificial Intelligence under Data Protection Law: Challenges and Solutions for India. <https://ir.nbu.ac.in/handle/123456789/5081>
- NitiAayog. 2018. National Strategy on Artificial Intelligence. <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>
- Ramya, P. and Manju, M. 2019. Artificial Intelligence for Sustainable Education in India: Problems and Prospects. *International Journal of Production Technology and Management*, pp. 135-143.
- Rudolph, J., Tan, S. and Tan, S. 2023. War of the chatbots: Bard, Bing Chat, ChatGPT, Ernie and beyond. The new AI gold rush and its impact on higher education. *Journal of Applied Learning & Teaching*.
- Sidlauskiene, J., Joye, Y. and Auruskeviciene, V. 2023. AI-based chatbots in conversational commerce and their effects on product and price perceptions. *Electron Markets*, pp. 33-24.
- Smutný, P. and Schreiberova, P. 2020. Chatbots for learning: A review of educational chatbots for the Facebook Messenger. *Computers & Education*. <https://doi.org/10.1016/j.compedu.2020.103862>
- Triparna, D.V., Raghavan, M. and Gert-Jan, D.V. 2021. Design Foundations for AI Assisted Decision Making: A Self-Determination Theory Approach. <https://scholarspace.manoa.hawaii.edu/items/975f6df0-a4bb-4f48-9b54-f7163644cb89>
- Wang, Z., Xie, Q., Ding, Z., Feng, Y. and Xia, R. 2023. Is ChatGPT a Good Sentiment Analyzer? A Preliminary Study. *ArXiv*, abs/2304.04339.
- Zaman, B.U. 2023. *Transforming Education Through AI, Benefits, Risks, and Ethical Considerations*.