

ARTIFICIAL INTELLIGENCE IN EDUCATION: ETHICAL CONSIDERATION AND POLICY – MAKING FRAMEWORKS

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ABSTRACT

This paper examines the ethical implications and policy responses surrounding the use of artificial intelligence (AI) in education. It explores how AI-driven tools—such as adaptive learning platforms, automated grading systems, and generative- AI assistants—are reshaping teaching, learning, and assessment. The study highlights key ethical challenges including data privacy, algorithmic bias, equity, academic integrity, and the changing role of teachers. Drawing on international guidelines and selected national initiatives, the paper proposes a human-centred policy framework that balances innovation with protection of students' rights. Recommendations include strengthening AI-literacy for teachers and students, embedding ethical- use guidelines in school and university policies, and establishing regular audits of AI tools used in education. The paper concludes that AI governance in education must be integrated into broader educational reform, rather than treated as a purely technical issue.

Keywords:-Artificial intelligence, AI ethics, AI policy, education, digital divide, data privacy, algorithmic bias, academic integrity, AI- literacy

1. INTRODUCTION

Digital technologies are rapidly transforming education, and artificial intelligence has emerged powerful force in teaching, learning, administration, and assessment. AI-enabled tools such as intelligent tutoring systems, automated grading, chat bots, and personalized learning platforms promise to increase efficiency, improve access, and support differentiated instruction. However, their integration raises urgent ethical questions about privacy, fairness, transparency, accountability, and the quality of human interaction in classrooms. This paper focuses specifically on AI ethics and policy in education, analysing how ethical concerns are being addressed at institutional, national, and international levels.

The study aims to:

- 1) Map key ethical issues raised by AI in educational settings;
- 2) review existing policy responses and guidelines;
- 3) Develop a conceptual framework for responsible AI governance in education; and
- 4) Suggest practical recommendations for schools, universities, and policymakers.

The scope includes K–12 and higher- education contexts, with emphasis on data- intensive and generative- AI tools.

2. LITERATURE REVIEW

2.1 AI in education: trends and applications

Recent literature highlights the growing use of AI for adaptive learning, early- warning systems for at- risk students, automated marking, and virtual teaching assistants. Studies show that AI can improve student engagement and learning outcomes when designed inclusively and with clear pedagogical goals. However, most research also warns that AI tools are often introduced without robust ethical safeguards or impact assessments.

2.2 Ethical concerns in educational AI

Scholarship on AI ethics in education identifies several recurring topics: Data privacy and surveillance: vast amounts of student data are collected, raising concerns about consent, storage, and commercial use. Bias and fairness: recommendation and grading algorithms may reflect and amplify existing social inequalities. Equity and the digital divide: AI benefits may be unevenly distributed across regions, schools, and socioeconomic groups. Academic integrity: generative AI tools blur the line between support and cheating, challenging traditional assessment methods. Teacher–student relationship: over-reliance on AI may weaken human mentorship and critical dialogue.

2.3 Policy and governance responses

International organisations such as UNESCO have published guidance on AI in education, emphasising inclusion, transparency, and human- centered design. Several countries and states have begun to integrate AI- literacy into curricula and develop explicit AI- use policies for schools and universities. Existing literature also calls for multi- stakeholder governance, including educators, learners, technologists, and civil society, in shaping AI- related regulations.

3. THEORETICAL/CONCEPTUAL FRAMEWORK

this study is grounded in a human- centered AI ethics framework, drawing on: UNESCO’s principles for AI ethics (transparency, fairness, privacy, accountability, human oversight). Critical- theoretical perspectives on power, surveillance, and inequality in digital education. The conceptual model presents three interacting layers: Technology layer: AI tools and data- processing systems. Institutional layer: schools, universities, and national education policies. Societal layer: cultural norms, labour markets, and power structures.

Ethical and policy decisions are shaped at each layer, and the paper argues that effective governance must connect all three rather than treating AI as a purely technical issue. This framework informs the analysis of findings and the formulation of recommendations.

4. RESEARCH METHODOLOGY

4.1 Research design

this study adopts a desk- based qualitative research design, combining conceptual analysis with a review of policy documents, guidelines, and scholarly articles on AI in education. The design is appropriate for mapping ethical issues, policy trends, and conceptual structures rather than testing statistical hypotheses.

4.2 Population and sample

the “sample” consists of: International policy documents (e.g., UNESCO AI- in- education guidelines).

Selected national and state- level AI- in- education policies.
Peer- reviewed journal articles on AI ethics in educational settings.

4.3 Data collection

Secondary data were collected from:
Official websites of UNESCO, national education ministries, and educational- technology associations.
Academic databases (e.g., Science Direct, Google Scholar, ERIC) using keywords such as “AI ethics,” “AI in education,” “algorithmic bias,” and “AI policy.”

4.4 Data analysis

Data were thematically analysed using an inductive approach. Emerging themes (e.g., privacy, bias, equity, academic integrity, teacher–AI roles) were coded and organised into categories using qualitative- data- analysis principles. These categories then informed the structure of the findings and discussion sections.

5. DATA PRESENTATION AND ANALYSIS / FINDINGS

5.1 Privacy and surveillance in learning environments

Many AI- based learning platforms collect detailed behavioural data (time -on- task, clicks, keystrokes, and in some cases audio/video). Policies often lack clear rules on data retention, student consent, or third- party sharing, raising concerns about surveillance capitalism in education. Users may be unaware of what data are collected or how they are leveraged for commercial or profiling purposes.

5.2 Bias, fairness, and equity

Evidence shows that AI recommendation and grading systems can reproduce gender, racial, and socioeconomic biases built into training data. For example, models trained on historically advantaged populations may systematically under- predict success for under-represented groups. Students in low- resource schools are less likely to have access to high- quality AI tools or technical support, deepening existing inequalities.

5.3 Academic integrity and assessment

Generative AI enables students to produce essays, solve problems, and generate code with minimal effort, challenging traditional assessment methods. Institutional policies vary widely: some institutions ban AI- generated work, while others allow limited, transparent use under supervision. This fragmentation creates uncertainty for students and instructors alike.

5.4 Teacher roles and classroom dynamics

Teachers report mixed feelings: some welcome AI as a support tool, while others fear de-professionalisation and loss of labour. Policies in some regions explicitly prohibit relying on AI as the primary mode of instruction, insisting that human-led teaching remains central. However, teacher-AI interactions are often under-theorised, and professional-development support remains limited.

5.5 Policy and governance mechanisms

International guidelines (e.g., UNESCO) emphasise inclusion, human- centred design, and capacity- building. A growing number of national and state- level policies include AI-literacy standards, ethical- use guidelines, and requirements for teacher training on AI tools. Yet many instruments remain non-binding, and enforcement mechanisms are weak.

6. DISCUSSION

The findings reveal that AI in education is neither inherently good nor bad; outcomes depend on how it is designed, governed, and embedded in broader educational practices. Several tensions emerge:

Between innovation and protection of students' rights. Between centralised data -driven decision- making and local autonomy of teachers. Between convenience for educators and the risk of algorithmic dependence. The paper argues that current policies often remain fragmented and reactive, focusing on risks like cheating while paying less attention to long-term social and structural impacts. A more robust approach would treat AI governance as part of broader educational reform, including curriculum design, teacher education, and digital-citizenship frameworks. Human- centred design, inclusive stakeholder participation, and ongoing monitoring are shown to be essential for aligning AI- driven innovation with educational values.

7. CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

AI has the potential to support more inclusive, adaptive, and efficient education systems, but its deployment raises serious ethical and policy challenges. These include data privacy, algorithmic bias, equity gaps, academic integrity issues, and shifting roles for teachers and students. International and national responses are emerging, yet they often lack coherence, enforceability, and long- term vision.

7.2 Recommendations

Develop clear AI- use policies for schools and universities that distinguish between permissible support and prohibited substitution, and require transparency about AI use in assignments. Integrate AI- literacy and ethics education into curricula at all levels, teaching students how AI works, how to detect bias, and how to use AI responsibly. Strengthen teacher training on AI tools, focusing on pedagogical integration, ethical concerns, and critical evaluation of AI- generated content. Establish independent audits and impact assessments for AI tools used in education, especially for high- stakes grading and selection. Prioritise inclusion and equity by ensuring affordable access to devices, internet, and AI-supported learning across regions and socioeconomic groups. Create multi- stakeholder governance bodies involving educators, learners, technologists, and civil- society organisations to co- design AI- related policies.

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