# ARTIFICIAL INTELLIGENCE AND THE RIGHT TO EDUCATION: HUMAN RIGHTS, EQUALITY AND HUMAN AGENCY IN THE AGE OF AUTOMATED LEARNING

*by*

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## ABSTRACT

Artificial intelligence (AI) is rapidly transforming education through generative AI, adaptive learning systems, automated assessment, learning analytics and algorithmic decision-making. These technologies offer significant opportunities to expand access to educational resources, personalise learning and support teachers. However, their integration into education also raises fundamental human-rights concerns relating to equality, non-discrimination, privacy, human dignity, autonomy, accountability and meaningful participation. This article examines AI in education through the contemporary international human-rights regime, with particular emphasis on the right to education. It argues that the traditional digital divide is evolving into an AI divide: inequality increasingly concerns not only access to electricity, devices and internet connectivity, but also access to capable AI systems, digital and AI literacy, quality data, local-language resources and the institutional capacity to participate in and challenge AI-mediated decisions. Drawing upon international human-rights instruments, United Nations and UNESCO materials, African regional policy and recent scholarship, the article applies the availability, accessibility, acceptability and adaptability framework to AI-enabled education. It examines algorithmic discrimination, educational data, children's rights, human agency, teachers' roles, transparency and linguistic inequality. It proposes an eight-principle human-rights framework based on meaningful universal access, equality and non-discrimination, inclusion and accessibility, privacy and data protection, human agency and oversight, transparency and explainability, accountability and effective remedy, and participation. The article concludes that the legitimacy of AI in education should not be measured by technological sophistication or efficiency alone. Rather, AI should be governed as a means of advancing the right to education while preserving human dignity, equality and agency.

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## 1. INTRODUCTION

Artificial intelligence has moved rapidly from the margins of educational technology into the centre of contemporary educational practice. Generative AI can produce explanations, exercises, summaries and instructional materials. Adaptive systems can modify learning activities according to individual performance. Learning analytics can identify patterns in student behaviour, while automated systems increasingly influence assessment, student support and educational administration.

These developments present substantial opportunities. AI may help extend educational resources to learners who lack access to specialised teachers, provide personalised learning experiences and support persons with disabilities through assistive technologies. The technology may also help teachers prepare instructional materials and provide feedback more efficiently.

Yet technological capability does not automatically translate into the realisation of human rights. AI-mediated education can reproduce existing inequalities, generate discriminatory outcomes, collect excessive personal information and weaken meaningful human participation in educational decisions. The central question is therefore not simply whether AI can improve educational efficiency or learning outcomes. It is whether AI can be deployed consistently with the rights and dignity of learners.

The right to education provides the appropriate normative starting point. Article 26 of the Universal Declaration of Human Rights recognises education as a right and states that education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms.[1] Article 13 of the International Covenant on Economic, Social and Cultural Rights similarly connects education with the full development of the human personality and sense of dignity.[2]

These provisions demonstrate that education is more than the transmission of information. It is a human-rights institution directed towards human development.

This distinction becomes increasingly important as AI enters educational systems. An automated system may increase efficiency while simultaneously excluding learners who lack connectivity. A generative AI tool may provide immediate answers while weakening

independent reasoning if used without appropriate pedagogical guidance. An algorithm may assist educational administrators while reproducing historical patterns of discrimination.

The contemporary international debate increasingly recognises these tensions. In 2024, the United Nations Special Rapporteur on the right to education examined the rapidly expanding use of AI in education and emphasised the need to examine its implications through a human-rights framework. The report considered AI's implications for curriculum, pedagogy and assessment and applied the established framework of availability, accessibility, acceptability and adaptability.[3]

UNESCO has similarly argued for a human-centred and rights-based approach to AI in education. Its 2025 analysis identified opportunities for increased access and personalised learning but warned that digital inequality may develop into an AI divide.[4]

This article develops the concept of the AI divide and examines its implications for the right to education. It argues that equality in the AI era requires more than formal access to schools or digital devices. It requires meaningful capacity to access, understand, use and challenge AI-mediated educational systems.

## 2. THE RIGHT TO EDUCATION AS THE NORMATIVE FOUNDATION

The international legal foundation of the right to education is well established. Article 26 of the Universal Declaration of Human Rights recognises education as a fundamental right and identifies the development of the human personality as one of its principal objectives.[1]

The International Covenant on Economic, Social and Cultural Rights provides a more detailed legal framework. Article 13 recognises everyone's right to education and requires education to be directed towards the full development of the human personality and sense of dignity.[2]

The Convention on the Rights of the Child reinforces these obligations in relation to children. Article 28 recognises the child's right to education on the basis of equal opportunity, while article 29 identifies the development of the child's personality, talents and mental and physical abilities as an objective of education.[5]

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These provisions establish an important principle for the AI era: educational technology must serve the purposes of education as a human right rather than redefine education merely as a technical process.

The Committee on Economic, Social and Cultural Rights' General Comment No. 13 provides a particularly useful analytical framework. It identifies four interrelated characteristics of education: availability, accessibility, acceptability and adaptability.[6]

Availability requires functioning educational institutions and programmes. In an AI-enabled environment, availability increasingly includes electricity, connectivity, suitable devices, digital platforms and trained personnel.

Accessibility requires education to be accessible without discrimination and to be practically and economically available. An AI educational system that requires expensive devices, premium subscriptions or high-speed internet may therefore create barriers to access.

Acceptability concerns the quality and appropriateness of education. AI-generated content must consequently be accurate, culturally appropriate, non-discriminatory and consistent with human dignity.

Adaptability requires education to respond to changing social conditions and diverse learner needs. AI has considerable potential to support this objective through personalised instruction and assistive technologies. However, adaptability should mean adaptation to learners rather than forcing learners to conform to algorithmic classifications.

The 4As therefore provide an existing human-rights framework through which AI-mediated education can be evaluated.

## 3. AI IN EDUCATION: PROMISE AND EVIDENCE

AI's potential contribution to education is substantial. It can provide personalised explanations, generate practice materials, offer immediate feedback and assist teachers with routine tasks. Assistive technologies may improve access for learners with disabilities, while adaptive learning systems may allow students to progress at different rates.

Recent empirical research has reported positive average effects of AI-assisted learning. Meta-analytical research published in 2025 has identified improvements in selected learning outcomes associated with AI and generative AI interventions.[7] However, the evidence also demonstrates considerable variation between studies and contexts.

This variation is significant from a human-rights perspective. An intervention that benefits students in a well-resourced university cannot automatically be assumed to produce equivalent benefits in a rural school with unreliable electricity, limited connectivity and few trained teachers.

The United Nations Special Rapporteur has also highlighted uncertainty concerning the long-term effects of AI in education and cautioned that much of the available evidence has historically been generated by developers of the technologies being evaluated.[3]

Accordingly, educational effectiveness should be treated as only one dimension of assessment.

The human-rights inquiry must ask additional questions: Who has access to the technology? Who is excluded? What data are collected? Are particular groups disproportionately disadvantaged? Can learners understand and challenge decisions? Who is accountable when an AI system causes harm?

These questions demonstrate why AI governance in education cannot be reduced to technological performance.

## 4. FROM THE DIGITAL DIVIDE TO THE AI DIVIDE

The traditional digital divide concerns unequal access to digital technologies, including electricity, devices, internet connectivity and digital skills. These inequalities remain substantial. UNESCO reported in 2025 that approximately 2.6 billion people worldwide lacked internet access in 2024.[4]

However, AI introduces additional dimensions of inequality.

The emerging AI divide concerns at least six interconnected factors: access to AI-enabled tools; affordability; quality of connectivity and computational resources; access to relevant and representative data; AI literacy; and the ability to participate in decisions concerning AI governance.

A learner may therefore have internet access but still lack meaningful access to AI-enabled education. The learner may not possess an appropriate device, may be unable to afford advanced services, may lack the skills required to evaluate AI-generated information, or may use a language poorly supported by the technology.

The distinction can be expressed simply:

Digital divide → access to digital technology.

AI divide → access + capability + literacy + representation + agency.

This development has significant implications for substantive equality.

Consider two students with the same formal entitlement to education. One attends a school with reliable electricity, high-speed internet, trained teachers and advanced AI learning tools. The other attends a school where electricity and connectivity are unreliable and teachers have limited access to digital training.

The formal right may be identical, but the practical educational opportunities are not.

If AI becomes increasingly integrated into tutoring, assessment, curriculum delivery and educational planning, unequal access to AI may become a mechanism for reproducing existing educational inequality.

The human-rights obligation should therefore extend beyond formal access. It should address the material conditions required for meaningful participation in AI-mediated education.

## 5. ALGORITHMIC DISCRIMINATION AND EQUALITY

AI systems are not inherently neutral. They depend on data, objectives, design assumptions and institutional choices. Where training data reflect historical inequalities, automated systems may reproduce or amplify those inequalities.

Educational AI may be used in admissions, student classification, assessment, dropout prediction, recommendation systems, learning analytics and allocation of educational opportunities. Each application raises potential equality concerns.

The international human-rights framework prohibits discrimination in the enjoyment of protected rights.[8] This principle must apply when educational decisions are mediated by algorithms.

The problem does not necessarily arise because an algorithm has been deliberately designed to discriminate. Discriminatory outcomes can result from unrepresentative training data, proxy variables, historical inequalities, inappropriate performance measures or deployment in contexts different from those in which a system was developed.

Research on algorithmic fairness in education has consequently emphasised the importance of examining both data and outcomes.[9]

The expression “the algorithm decided” should never terminate the accountability inquiry.

Where an automated system affects a learner's educational opportunity, responsibility must remain identifiable. High-impact educational decisions should be subject to human review, documentation and mechanisms through which affected persons can challenge inaccurate or discriminatory outcomes.

The mathematical form of a decision does not make the decision normatively neutral.

## 6. PRIVACY, DATA PROTECTION AND CHILDREN'S RIGHTS

AI-enabled education is increasingly data-intensive. Educational platforms may process academic records, interaction histories, behavioural information, assessment results and other information about learners.

Privacy is closely connected to dignity and autonomy. Excessive monitoring can affect how students behave and may create an educational environment in which learners feel continuously observed.

Article 17 of the International Covenant on Civil and Political Rights protects individuals against arbitrary or unlawful interference with privacy.[10] Article 16 of the Convention on the Rights of the Child provides corresponding protection for children.[5]

Children require particular attention because they may not fully understand the long-term implications of data collection and profiling.

AI governance in education should therefore incorporate data minimisation, purpose limitation, appropriate security, clear retention policies and restrictions on secondary uses. Educational institutions should be able to explain why particular categories of information are necessary and how they will be protected.

Consent alone may also be insufficient. Where students are required to use an AI platform as part of their education, their practical ability to refuse may be limited.

A rights-based approach therefore requires institutional responsibility rather than placing the entire burden of privacy protection upon individual learners.

## 7. HUMAN AGENCY AND THE ROLE OF TEACHERS

Education is a social and relational process. Teachers do more than transmit information. They interpret learners' needs, provide encouragement, exercise professional judgement and help students develop critical and ethical capacities.

The United Nations Special Rapporteur has emphasised that education is a collective and social endeavour and has cautioned against allowing digitalisation to replace the role of teachers and human interaction.[3]

Human agency should therefore remain central to AI-enabled education.

For teachers, this means retaining meaningful authority to review and override AI-generated recommendations.

For learners, it means retaining the capacity to question AI-generated information and obtain human assistance when necessary.

A student affected by an AI-generated assessment should be able to ask: Why was I assessed in this manner? What information influenced the decision? Was that information accurate? Can a teacher review it? Can the decision be challenged?

These are questions of procedural fairness as well as technology.

The appropriate principle is therefore not that AI must never make recommendations. Rather, consequential educational decisions should not become effectively unreviewable merely because responsibility has been delegated to software.

## 8. TRANSPARENCY AND EXPLAINABILITY

Transparency is essential to meaningful accountability.

A learner should know when AI materially contributes to an educational decision. Relevant stakeholders should also receive sufficient information about the purpose of the system, the categories of data involved, its significant limitations and the role of human decision-makers.

UNESCO's Recommendation on the Ethics of Artificial Intelligence identifies transparency, explainability, accountability, human oversight, fairness and non-discrimination among important principles for responsible AI.[11]

For education, technical transparency should be distinguished from rights-relevant transparency. A learner does not necessarily need to understand the complete mathematical architecture of an AI model. The learner does, however, need enough information to understand how the system affects their rights and how an adverse decision may be reviewed.

Transparency is consequently connected to remedy. Without meaningful information, a learner may not know that an automated system contributed to an adverse decision or may be unable to challenge it effectively.

## 9. LINGUISTIC AND CULTURAL EQUALITY

AI-mediated education also raises questions concerning language and culture.

AI systems generally perform better in languages for which substantial digital training resources exist. This creates potential inequalities for learners who use less-resourced languages.

The issue is particularly relevant in Africa, where educational and social environments involve extensive linguistic diversity. If AI educational tools provide substantially better support in a limited number of globally dominant languages, they may privilege learners who already possess stronger proficiency in those languages.

This creates a connection between AI governance and the acceptability and adaptability dimensions of the right to education.

Rights-respecting AI should therefore support linguistic diversity and culturally appropriate educational content. Investment in local-language datasets, research capacity and educational resources is important to preventing technological inequality from becoming linguistic inequality.

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## 10. AFRICA AND THE GLOBAL SOUTH

AI governance in education cannot be developed exclusively around the circumstances of highly digitised economies.

African educational systems face simultaneous challenges involving infrastructure, affordability, electricity, connectivity, teacher capacity, educational financing and unequal access to learning materials. AI may help address some of these constraints, but only where deployment is adapted to local realities.

The African Union's Continental Artificial Intelligence Strategy, endorsed in July 2024, adopts an Africa-centred, development-focused approach and promotes ethical, responsible and equitable AI.[12]

This regional approach is important for the right to education because African states should not simply become passive consumers of educational AI systems developed elsewhere.

African participation should extend to AI research and development, educational dataset development, teacher training, local-language technologies, infrastructure, regulatory design and international standard-setting.

Such participation is itself connected to human rights. Communities affected by technological systems should have meaningful opportunities to influence the rules governing those systems.

A genuinely global AI regime therefore requires not merely technological diffusion but participation in technological governance.

## 11. A HUMAN-RIGHTS FRAMEWORK FOR AI IN EDUCATION

The analysis supports an eight-principle framework for AI in education.

First, universal and meaningful access. States and educational institutions should address the infrastructure, connectivity, device and affordability barriers that prevent meaningful participation.

Second, equality and non-discrimination. AI systems should be tested and monitored for discriminatory effects across relevant social, economic, linguistic, geographic and disability-related characteristics.

Third, inclusion and accessibility. Accessibility should be incorporated at the design stage rather than added after deployment.

Fourth, privacy and data protection. Educational data should be collected and processed for legitimate purposes and protected according to the sensitivity of the information.

Fifth, human agency and meaningful oversight. Teachers and qualified educational personnel should retain meaningful authority over consequential educational decisions.

Sixth, transparency and explainability. Learners should know when significant educational decisions involve AI and should receive understandable information concerning the relevant processes.

Seventh, accountability and effective remedy. Institutions and technology providers should have clearly defined responsibilities, audit mechanisms and accessible procedures for correcting harmful decisions.

Eighth, participation. Students, teachers, parents, persons with disabilities, researchers and affected communities should have meaningful opportunities to participate in decisions concerning educational AI.

These principles can be converted into a practical human-rights test:

AI proposal → educational purpose → availability/accessibility assessment → equality assessment → privacy and child-rights assessment → human-agency assessment → transparency and accountability assessment → participation and remedy → deployment and continuous monitoring.

The significance of such a framework is that human-rights assessment should occur before harm occurs, rather than being treated merely as a mechanism for responding to harm after deployment.

## 12. FROM TECHNOLOGICAL INNOVATION TO RIGHTS-CENTRED INNOVATION

The governance of AI in education should move from technology-first innovation towards rights-centred innovation.

A technology-first approach asks: What can AI do?

A rights-centred approach asks: What should AI do, for whom, under what conditions, with what safeguards and subject to whose accountability?

This distinction is critical because technological consequences depend upon institutional context.

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An AI tutoring system introduced into a well-resourced school may expand educational opportunity. The same system introduced into a school without reliable electricity, connectivity or teacher training may generate little benefit or create additional inequalities.

Consequently, governments and educational institutions should conduct appropriate human-rights and impact assessments before deploying high-impact AI systems. Procurement rules should address privacy, accessibility, bias testing, security and transparency. Teachers should receive training not only in operating AI tools but also in evaluating their limitations.

Students should also receive AI literacy education. The objective should be to develop learners who can use AI effectively while understanding that AI-generated information may be incomplete, inaccurate or biased.

Remedy is equally important. Where an automated system produces an inaccurate or discriminatory decision, the learner should have access to human review and correction.

Responsibility should not disappear behind software.

## 13. THE CONTEMPORARY GLOBAL REGIME AND THE NEED FOR GOVERNANCE

The international human-rights regime already contains many of the principles necessary to govern AI in education.

The UDHR establishes education as a right. The ICESCR elaborates the substantive obligations associated with that right. The CRC provides child-specific protections. General Comment No. 13 establishes the 4As framework. UNESCO's Recommendation on the Ethics of Artificial Intelligence provides broader principles concerning responsible AI. The UN Special Rapporteur's 2024 report directly examines AI and the right to education.[3]

The challenge is therefore not simply the absence of principles. It is the translation of those principles into operational governance.

International standards should establish common human-rights expectations. National governments should translate those expectations into legislation and regulation. Educational institutions should establish internal governance mechanisms, procurement standards and review procedures. Technology providers should implement responsible design, documentation, testing and monitoring.

Governance should also remain adaptive. AI systems and their educational applications will continue to change. Human-rights principles provide the stable normative foundation against which those changes can be assessed.

The appropriate global regime should therefore combine technological innovation with institutional accountability.

## 14. CONCLUSION

Artificial intelligence presents one of the most consequential technological transformations in contemporary education.

Its potential is substantial. AI can support personalised learning, improve accessibility, expand educational resources and assist teachers. Yet these possibilities do not eliminate the human-

rights risks associated with unequal access, algorithmic discrimination, intrusive data practices, inadequate transparency and loss of human agency.

The central development is the movement from the digital divide towards an AI divide.

The digital divide concerned unequal access to digital infrastructure and connectivity. The AI divide is potentially deeper. It concerns unequal access to AI-enabled learning, unequal capacity to use and evaluate AI, unequal linguistic and cultural representation, and unequal ability to participate in or challenge AI-mediated decisions.

This creates a significant challenge for the right to education.

The international human-rights framework already provides a strong foundation for addressing that challenge. Education must be available, accessible, acceptable and adaptable. It must respect equality and non-discrimination. Children's rights must be protected. Privacy must be respected. Educational decisions must remain accountable. Human agency cannot be surrendered merely because a decision has been automated.

The evidence concerning AI's educational effectiveness is promising but context-dependent. Positive average outcomes do not establish that every AI system, every educational environment or every learner will benefit equally.

The appropriate response is therefore neither unconditional technological optimism nor blanket technological rejection.

It is rights-centred governance.

AI in education should be governed according to eight core principles: meaningful universal access; equality and non-discrimination; inclusion and accessibility; privacy and data protection; human agency and oversight; transparency and explainability; accountability and effective remedy; and meaningful participation.

Ultimately, the future of AI in education should not be determined solely by what technology can do.

It should be determined by what human rights require.

The purpose of educational technology should remain the development of human beings. AI should therefore augment human learning without diminishing human dignity, equality or agency.

A genuinely contemporary global regime for the right to education must ensure that technological progress expands educational opportunity without creating a new hierarchy between those who can benefit from artificial intelligence and those who cannot.

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