LEGAL AND ETHICAL IMPLICATIONS OF USING AI IN EDUCATION

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Abstract

Nowadays, AI-based tools are increasingly used in decision-making, and this is also true for schools. Decision-making is an activity whose boundaries are fixed by legal regulations and whose consequences are drawn by ethical expectations. The aim of our paper is to examine both the legal and ethical dimensions of integrating AI based tools into the educational ecosystem. In order to attain our goal, we start by briefly addressing the aspects of decision making in schools, especially when supported by AI. The second section presents and compares the principal legal frameworks governing this field, with particular emphasis on the European Union and the United States, as the two leading regulatory actors. In the third part, we list several quasi-generally accepted ethical considerations that support the use of these technologies in schools and universities. We also mention some principles that should guide the deployment of these devices in educational institutions. Finally, we analyse the extent to which these legal provisions align with the broader ethical expectations of contemporary society.

Keywords: Artificial Intelligence (AI), AI in Education, AI Regulation, Ethical Issues of AI, AI Biases.

1. Introduction

The development of AI-powered tools has profoundly transformed not only numerous industries but also various aspects of daily life, enhancing efficiency, accuracy, and productivity. These tools, relying on advanced algorithms, machine learning techniques, and sophisticated data-processing capabilities, are able of performing tasks traditionally associated with human intelligence. The field of education is no exception, with AI contributing to the improvement of personalization, operational efficiency, and accessibility. However, realizing the benefits of AI in education in an equitable and sustainable manner necessitates careful attention to the associated challenges and risks. While the integration of AI into educational environments holds significant promise, it also raises critical ethical and legal considerations. Among the most pressing challenges are concerns regarding privacy, particularly in relation to the collection and processing of sensitive student data; the substantial financial investments required to develop and maintain appropriate technological infrastructures; and the need to ensure equitable access to AI tools for all students, irrespective of socio-economic background. Furthermore, educators must acquire new competencies to effectively incorporate AI into pedagogical practice. There are three principal domains in the educational application of AI tools that necessitate robust legal regulation: data protection and security, intellectual property rights, and accountability and liability. Of these, data protection emerges as the most prominent area of concern, because AI systems often collect and process extensive volumes of student data, thereby heightening the need for comprehensive regulatory frameworks and mechanisms to ensure compliance.

2. Decision-making in Education

Decision-making is a fundamental and unavoidable component of educational activity, as teachers and school leaders make decisions every day that directly affect the development of students, the quality of teaching and the school environment. The

boundaries of these decisions are set by two main factors: the legal framework and ethical expectations. Regulations – whether national laws, local regulations or institutional rules – clearly define what decisions can be made legally and which ones are against the law. Now, ethical norms, such as justice, fairness, trust and respect that go beyond the law, are no less important and they also set limits. A decision can be legal, but at the same time ethically objectionable, if, for example, it ignores the individual needs of students or their disadvantaged situation. Educational decision-making is therefore a continuous search for a balance between following the rules and assuming moral responsibility, which requires a high level of professional awareness and reflective thinking. Education is inherently linked to decision-making in that informed decisions need to be made in every educational institution regarding curriculum development, instructional strategies, classroom management, and assessment practices. These decisions, of course, differ greatly depending on the level at which they are made: central (ministry), county (educational inspectorate), local (mayor's office), or internal (school). But, ultimately, considering all this, it is the teacher who must make the decisions related to education/teaching/training in the classroom. These micro-level decisions, shaping the teacher-student relationship, concern the following main areas:

- *Curriculum design:* Within a given framework, educators and management must decide what content students should learn, which includes selecting appropriate materials and designing a curriculum that meets educational standards and student needs. Decision-making in curriculum design involves aligning learning objectives with instructional goals and determining how best to structure learning experiences.
- *Instructional strategies:* Teachers are constantly making decisions about the most effective instructional strategies to use in the classroom. This includes choosing teaching methods that accommodate different learning styles, deciding when to introduce new concepts, and adapting lessons based on student feedback and performance. Teachers should weigh the benefits of different approaches, such as collaborative learning versus direct instruction, to maximize student engagement and understanding.
- *Classroom management:* Effective classroom management requires teachers to make decisions about how to create a positive learning environment, manage disruptions, and promote student engagement in the educational process. Teachers must decide on rules, procedures, and consequences that encourage good behaviour and maintain order while fostering a supportive and inclusive classroom culture.
- *Measurement and assessment:* Teachers must decide how to assess students' knowledge and progress. This includes choosing tools (e.g., formative, summative, standardized tests) that will usefully contribute to students' understanding. Decision-making about assessment also includes interpreting data to inform instructional adjustments and provide feedback to support student progress.
- *Professional development:* Educators make decisions about their own professional development, seeking out and identifying areas where they need it. This includes choosing workshops, courses and other resources that will enhance their teaching skills and knowledge.

Each of these decision making related activities can be now backed by AI tools, which significantly increases their efficiency, while reducing the burden on teachers and management. However, in addition to the well perceptible advantages and support they offer, there are also many disadvantages in using these tools.

3. Main Legal Implications of the Use of AI

Integrating AI into the educational environment offers many benefits, but it also raises significant legal considerations. The most important area of concern, by all accounts, is data protection. AI systems often collect and process student data from extensive areas. This rightly raises concerns about both the creation of data protection regulations and their compliance. There are basically three main areas of educational application of AI tools that require strong legal regulation, namely:

- Privacy and security: Schools must ensure that AI tools comply with these rules to prevent unauthorized data access or sharing, especially when third-party AI providers are involved.
- Intellectual property rights: The use of AI in education may raise questions related to intellectual property rights, both in the creation of educational content or student assignments, such as those regarding the ownership of the copyright. On the other hand, concerns may arise regarding plagiarism, as students using AI to complete assignments may intentionally or even accidentally commit plagiarism, which may lead to a violation of academic integrity.
- Accountability and responsibility: Determining responsibility for AI-driven decisions is a key issue. If an AI system makes recommendations to predict student outcomes, it is essential to determine who is responsible for these – the educators, the institution or the AI developers. Related to this, AI systems can unintentionally perpetuate biases that can lead to discriminatory practices. Schools should ensure that they are regularly monitored for fairness.
- The United States is arguably a global leader in protecting student rights and data. I will briefly list the most important federal legal standards, as they highlight exactly where regulation is most needed regarding the use of AI in education (Sexton & Vance, 2024):
- Family Educational Rights and Privacy Act (FERPA), which regulates access to and disclosure of student education records. It provides parents with access to their child's records, allows for amendments, and regulates their disclosure. (OLRC, 2025)
- The Elementary and Secondary Education Act (ESEA), Every Student Succeeds Act (ESSA): The ESEA is the primary legal norm governing K-12 education, and the ESEA, its most recent reauthorization, only authorizes evidence-based interventions, and technologies adopted with AI must comply with this. (CRS, 2024)
- Protection of Pupil Rights Amendment (PPRA) requires schools to provide parents with the ability to allow or prohibit student participation in data collection on eight protected topics. AI tools that request (or otherwise allow access to) information about these topics may require parental consent. In addition, the PPRA may come into play when AI tools are used in student surveys. (USDE, 2020)
- Title VI of the Civil Rights Act of 1964 prohibits discrimination based on racial, national origin or skin colour in educational programs and activities. Based on this, it is possible to take action against AI tools used in schools if their use can promote a form of system-level discrimination in education. (DoJ, 2025)
- Title IX of the Education Amendments of 1972 prohibits gender-based discrimination in educational programs and activities. Its role is analogue with the legislation presented above. (DoJ, 2015)
- Americans with Disabilities ACT (ADA) prohibits disability-based discrimination in all public institutions, including the educational ones. Although AI technologies can generally help students with disabilities in learning, but sometimes discrimination can also occur. This may happen when schools introduce too extensive bans for AIr use or require the use of devices that are not properly accessible to people with disabilities. (DoJ, s.d.)
- Children's Online Privacy Protection Act (COPPA) requires companies to obtain a controlled consent from parents (or, if applicable from schools) before collecting data from children under 13 years of age. Schools are not directly regulated, but technology service providers (including Edtech companies) that collect data from students are. At the same time, it can limit the use of children's data in AI devices training. (FTC, s.d.)
- Children's Internet Protection Act (CIPA) requires E-Rate (universal service programs for schools and libraries) funded units to monitor and filter the Internet content. Schools often use AI tools to facilitate online content filtering and monitoring of students. (FCC, s.d.)

At state level, decision makers can adapt faster to technological changes and can handle the concerns they generate more flexibly than at the federal one. Many states have already taken important measures to regulate AI and have developed working groups to deal with the issue. Local governments and other organizations can also play a key role in regulating AI educational applications and schools can also have their own guidelines in this area.

The European Union (EU) has taken on a global leadership in and is at the forefront of AI regulation. The Commission announced its proposal in April 2021, entitled “Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act)”. (EC, 2021b) The purpose of this is to manage the risks of specific uses of AI, by classifying hem into four different levels: unacceptable, high, limited and minimal risk. Regulation ensures that European citizens can rely on the AI tools they use, which is a key issue in building a suitable AI ecosystem and strengthening the EU's global competitiveness. The proposal goes hand in hand with a coordinated plan for AI. (EC, 2021a)
The European Parliament adopted a resolution on 19 May 2021 on the use of AI in education, as well as in the cultural and audio-visual sectors. This classifies educational AI applications into the so-called "high risk" category, which subjects them to strict safety, transparency, equity and accountability requirements. Specifically, they highlight AI systems that are used to accept, enrol or classify students into educational institutions based on their performance. The EU recognizes that AI systems can unintentionally maintain biases and therefore require measures to prevent discrimination, ensuring that AI applications in education comply with the principle of equality and equality. Since the transparency of the AI decision-making processes is a key requirement, the EU requires the AI systems to be transparent, with clear accountability structures that ensure that decisions can be checked and justified. (EP, 2022)

Finally, on August 1, 2024, the (EU) 2024/1689 regulation of the European Parliament and the Council on the establishment of harmonized rules for AI came into effect. (EP&C, 2024) The purpose of the legislation is to establish a joint regulatory and legal framework for AI within the EU, with provisions that will gradually enter into force over the next 6-36 months. It does not provide individuals with rights, but regulates AI system service providers and entities using AI in a professional environment. In the case of general-purpose applications, it provides transparency requirements, with reduced requirements for open source and further evaluations for large models. It also establishes the European Agency for Artificial Intelligence to promote national cooperation and to ensure compliance.
It is undeniable that AI is able to effectively improve educational experience, but schools must handle the legal and ethical challenges that follow them. It is imperious to outline a comprehensive, yet flexible framework for legal and ethical considerations, by developing clear guidelines, ensuring compliance with existing laws, and promoting open communication with stakeholders are fundamental steps to integrate AI in the educational environment in a responsible way.

4. Ethical Implications of Using AI

Despite the benefits, the development of AI-based tools poses significant ethical and social challenges. Concerns about privacy, bias, and accountability have been raised when AI systems are used in sensitive areas such as education, law enforcement, or workforce management. Algorithms may unintentionally perpetuate existing biases in the data, which can lead to unfair outcomes. (O’Neil, 2016) Ensuring transparency and fairness in AI systems is essential to reduce risks and strengthen user trust.

Additionally, the automation of tasks with AI-powered tools poses a potential threat to employment as machines increasingly perform tasks traditionally performed by humans. This shift necessitates a rethinking of workforce development and education to prepare individuals for new roles in an AI-driven economy. (Brynjolfsson & McAfee, 2014)

The incorporation of AI into teaching raises a host of ethical questions, just as it does in any other area of personal decision-making. In a more general framework, the most important issue seems to be the delegation of decision-making authority to machines. As

algorithms become more sophisticated and capable of analysing ever-increasing amounts of data, humans increasingly rely on these systems to make critical decisions, raising questions about accountability. Who is ultimately responsible if an AI-based decision has negative consequences? Does delegating decision-making absolve individuals of their moral obligations?

The ethical dimensions of AI in personal decision-making are intertwined with its ontological implications. Ethical concerns arise when decisions made with the help of AI generate outcomes that are not in line with generally accepted human values. The ontological dimension becomes apparent when we consider the ethical responsibilities that accompany these outcomes: is the individual solely responsible for the decisions made in collaboration with AI?

The ontological status of moral agency is called into question because, at least for the time being, we cannot attribute moral intuition and consciousness to AI systems. This raises another question: does AI's participation in decision-making lead to a dilution of human responsibility or a redistribution of moral responsibility? The evolving ethical landscape of the AI era requires a reassessment of the ethical foundations of moral agency and guilt.

Furthermore, the use of AI in personal decision-making can lead to algorithmic bias and discrimination. If these systems are trained on flawed data sets, they can perpetuate and amplify existing social biases and raise concerns about the fairness and justice of decision outcomes. Individuals may unwittingly make decisions based on AI recommendations that perpetuate discriminatory patterns. This ethical dilemma highlights the need for rigorous oversight, transparency, and ongoing evaluation of AI algorithms to ensure unbiased and fair decision-making.

Responsible development is essential for AI to continue to have a positive impact on the digital environment. Governments, industry leaders, and researchers must work together to develop ethical guidelines, regulations, and best practices. Transparency, fairness, and accountability must be prioritized to build trust and prevent misuse of AI technologies. Leaders in the field are competing to develop ethical principles, and many such systems are based on the Belmont Report (DoHEW, 1979), which can be summarized as follows:

Respect for persons:

- individuals should be treated as autonomous agents,
- persons with diminished autonomy are entitled to protection.

Beneficence:

- do not harm,
- maximize possible benefits and minimize possible harms.

Justice:

- to each person an equal share,
- to each person according to individual need,
- to each person according to individual effort,
- to each person according to societal contribution,
- to each person according to merit.

The IBM, for example, established its own, rather complex, point of view on AI Ethics (IBM Cloud Education, 2021), creating three Principles of Trust and Transparency

- The purpose of AI is to augment human intelligence: IBM "do not seek to replace human intelligence with AI, but support it."
- Data and insights belong to their creator: "IBM clients can rest assured that they, and they alone, own their data."
- AI systems must be transparent and explainable: "technology companies need to be clear about who trains their AI systems, what data was used in that training and, most importantly, what went into their algorithms' recommendations."

These principles are backed by five pillars in order to guide the responsible adoption of AI technologies, which include:

- Explainability: "An AI system should be transparent, particularly about what went into its algorithm's recommendations, as relevant to a variety of stakeholders with a variety of objectives."
- Fairness: "This refers to the equitable treatment of individuals, or groups of individuals, by an AI system."
- Robustness: "AI-powered systems must be actively defended from adversarial attacks, minimizing security risks and enabling confidence in system outcomes."
- Transparency: "[…] users must be able to see how the service works, evaluate its functionality, and comprehend its strengths and limitations."
- Privacy: "AI systems must prioritize and safeguard consumers' privacy and data rights […]."

The European Commission has published its *Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning*, which aim to help educators understand the opportunities and risks associated with AI and the use of data in education, promoting a positive, critical and ethical engagement with AI systems. The ethical guidelines emphasise the need to comply with data protection regulations, ensuring that AI systems handle student data responsibly and transparently. (EC, 2022)

Unleashing the full potential of AI requires addressing ethical concerns, fostering collaboration among stakeholders, and ensuring equitable access to AI technologies. Policymakers, researchers, and industry leaders must work together to create frameworks that facilitate the development and deployment of responsible AI.

"It's crucial to understand the various ethical implications of AI models for society and take the necessary steps to reduce these risks/harms. […] The stakes are high. The impact is huge, and in many cases irreparable/irreversible once deployed." argues Toju Duke in his recently published book, aptly titled "Building Responsible AI Algorithms: A Framework for Transparency, Fairness, Safety, Privacy, and Robustness." (Duke, 2023, p. 147)

5. Conclusions, Limitations, and Future Work

Although we have briefly reviewed the legal frameworks of the EU and the US, the number of countries that are taking steps to regulate AI at the government level, especially with regard to its role in education, is much larger. Moreover, the US is not at the forefront of developing a regulatory framework for AI, and the current administration is not seeking to do so, leaving it to the corporate sector. It seems that educational regulations are intended to ensure the appropriate use of applications in schools. Among the countries that have developed legal frameworks and ethical principles regarding the use of AI, we should mention China, South Korea, Singapore, Canada, Japan, Brazil, the United Arab Emirates and Saudi Arabia. When we look at the use of AI in schools, we find South Korea, China, the United Arab Emirates and Australia at the forefront again. The picture is not yet uniform within the EU either, with Austria, Belgium, France, the Czech Republic, Germany, Portugal and, last but not least, Estonia among the frontrunners.

In our article, for reasons of space alone, we were not able to present all the actors. Moreover, the picture is not only complicated, but also constantly changing. Regulations can only follow extremely rapid technical changes with great difficulty and with a significant time lag. Regulatory processes are further complicated by difficulties in interpretation, the secrecy surrounding developments, and the different political and economic interests. All of this clearly shows that our research, of which we were only able to present an initial, introductory part here, can be continued for a long time, expanding it both spatially and to several other aspects.

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