ARTIFICIAL INTELLIGENCE IN EDUCATION: ETHICAL AND PEDAGOGICAL CONSIDERATIONS

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Abstract. Artificial intelligence (AI) is reshaping education by enabling personalized learning and automating routine tasks, yet it also raises ethical and pedagogical challenges. This article compares Russian and international perspectives, highlighting concerns around transparency, teacher autonomy, and inequality. The analysis shows that while AI can enhance learning, it cannot replace the human role of educators. A balanced, human-centered approach is necessary to ensure AI supports rather than undermines education.

Keywords: *artificial intelligence, education, ethics, pedagogy, teacher role, inequality.*

The rapid spread of artificial intelligence (AI) into nearly every corner of our lives has forced educators, researchers, and policymakers to ask a difficult question: what does this mean for education? In schools and universities, AI is often presented as a tool with enormous potential to improve teaching and learning. Intelligent tutoring systems, adaptive learning platforms, and automated feedback mechanisms promise to personalize education in ways that were unthinkable even a decade ago. Proponents argue that AI can free teachers from routine administrative tasks, allowing them to focus on mentoring and creativity, while students benefit from personalized learning journeys that adjust to their pace and style. At first glance, this sounds like an almost utopian vision of education powered by technology.

Historically, the idea of "intelligent" machines supporting learning is not new. Experiments with computer-assisted instruction and intelligent tutoring systems go back to the 1970s. What has changed in recent years is the power and accessibility

of technologies like machine learning and natural language processing. These advances make it possible to analyze massive amounts of educational data and to generate personalized feedback in real time. Scholars such as Rose Luckin describe AI as a potential "assistant" to teachers, not a replacement - one that could help educators make better decisions by providing insights into student progress [4]. In contrast, Neil Selwyn is skeptical, warning that AI is often promoted with exaggerated promises that distract from the more troubling issues of surveillance and inequality [5]. This tension between hope and caution - captures much of the current debate about AI in education.

Russian researchers add an important dimension to this conversation. Sergei Grigoriev, for instance, draws on the legacy of Lev Vygotsky to argue that technologies like AI should be understood as cultural tools that shape human development [2]. From this perspective, AI is never neutral: it changes not only how we learn but also what we learn and how we relate to each other in the process. Elena Dmitrieva has expressed concern that algorithmic systems in education could unintentionally reinforce social inequalities, since they are often designed without sufficient attention to diverse learners' contexts. In other words, the risk is not only technical bias but also moral negligence if educators treat AI as a substitute for their professional judgment [1].

One of the clearest ethical challenges involves privacy and data protection. AI-driven platforms depend on collecting enormous amounts of information about students—everything from test scores and interaction patterns to, in some cases, biometric signals. While these data can generate useful insights for teachers, they also raise concerns about who controls and profits from them. International researchers such as Holmes, Bialik, and Fadel warn of the dangers of turning student data into a commercial product [3]. In Russia, Anna Soldatova emphasizes that constant digital monitoring can have psychological costs, such as stress, anxiety, and reduced motivation among young learners [7]. These observations remind us that

ethics in education is not only about legal regulations but also about protecting the trust and well-being of students.

Another serious concern is algorithmic bias. Cathy O'Neil has shown how algorithms in fields such as hiring and policing can reproduce and even amplify social inequalities [7]. The same dangers exist in education. If AI systems are trained mostly on data from privileged schools, they may misinterpret or undervalue the achievements of students from rural or marginalized backgrounds. Russian scholars, including Dmitrieva, point out that this risk is particularly acute in a country as socio-economically diverse as Russia, where educational opportunities vary dramatically by region. These insights underscore a key point: AI in education does not operate in a vacuum. It reflects the values, assumptions, and power structures of the societies that design and deploy it.

The pedagogical implications of AI are no less profound. Advocates argue that personalized learning powered by AI can make education more inclusive, allowing students to move at their own pace. Yet critics caution that learning is not simply about the efficient delivery of content. It is also a social, emotional, and cultural process. Selwyn and Williamson warn that the rhetoric of "personalization" is often driven more by commercial interests than by sound pedagogy [6, 7]. Grigoriev makes a similar point from a Russian perspective: technology should not be imported wholesale from Western contexts but adapted carefully to respect the humanistic and collective traditions of Russian education [2].

The role of teachers sits at the center of this debate. Optimists like Luckin (2018) suggest that AI can relieve teachers of repetitive tasks such as grading, giving them more time to focus on empathy, creativity, and mentorship. Critics, however, fear that such rhetoric hides an agenda of "deskilling," where teachers become facilitators of pre-programmed content rather than active professionals with autonomy. Russian educators echo this concern. Dmitrieva insists that teachers must retain their agency and responsibility, ensuring that AI serves pedagogical goals

rather than dictating them [1]. The question is not whether AI will change teaching - it already is - but whether those changes will empower or diminish teachers.

To understand the ethical and pedagogical implications of artificial intelligence in education (AIEd), this study does not rely on experiments, surveys, or quantitative measures. Instead, it takes a reflective and analytical path. The goal is to map out how scholars from different traditions - Russian and English-speaking - have approached the issue, and to see where their concerns converge or diverge. AI in education is not just a technical subject; it is a cultural and moral one. Because of this, the most suitable method here is a critical review of the existing scholarship.

Russian and international sources are not treated as isolated bodies of work but are put into dialogue. This makes it possible to see shared concerns, such as the dangers of bias, as well as distinctive emphases—such as the Russian tradition's focus on cultural and moral responsibility. Rather than forcing these perspectives into a single framework, the study respects their differences while showing how they illuminate one another.

This research is guided by two theoretical orientations. The first is critical pedagogy, which emphasizes agency, dialogue, and the danger of reducing education to technical delivery. The second is the ethics of technology, which asks how tools embody values and distribute power.

Of course, there are limits. This study is based on secondary sources rather than original fieldwork. It cannot measure the effectiveness of AI tools in classrooms. But the aim is not to provide numbers; it is to clarify the stakes of the debate. By bringing Russian and English-speaking scholarship into conversation, this approach lays the groundwork for future empirical studies and, more importantly, helps educators and policymakers think critically about what kind of educational future they want AI to create.

The literature review reveals a set of recurring insights into how artificial intelligence reshapes education, both ethically and pedagogically. Although the

works of Russian and international scholars sometimes highlight different aspects, their findings intersect in meaningful ways. Three main results emerge from this comparative analysis: first, AI in education raises profound ethical challenges that cannot be ignored; second, it redefines pedagogy, reshaping the roles of teachers and students; and third, it amplifies questions of inequality, both within nations and globally.

The first clear result concerns ethics and trust. Across contexts, scholars agree that the promise of AI is inseparable from questions about privacy, bias, and responsibility. International authors such as Holmes, Bialik, and Fadel emphasize that while AI tools can provide valuable insights into learning processes, they also require extensive collection of personal data. The fear is that this data could be misused, commercialized, or even weaponized. Russian researchers echo these concerns but often go further, focusing on the human and psychological consequences. Anna Soldatova shows how constant digital surveillance can create stress and undermine students' intrinsic motivation. The result is a shared recognition: for AI to work ethically in education, it must protect students' dignity and maintain trust between learners, teachers, and institutions.

The second result relates to pedagogical transformation. AI is not just another classroom tool; it changes how learning is structured and how teachers see their role. Internationally, Luckin describes AI as a supportive "assistant" that frees teachers from repetitive tasks so they can focus on empathy and creativity. Selwyn (2019), however, warns that such rhetoric risks masking attempts to deskill teachers, turning them into facilitators of pre-programmed content. Russian scholars like Grigoriev approach this transformation through the cultural-historical lens, reminding us that education is not only about efficiency but about nurturing social and cultural values. Together, these perspectives reveal a consensus that AI has the power to reshape pedagogy, but they differ in how they frame its risks: for some, the concern is

economic and political (teacher deskilling); for others, it is cultural and moral (loss of educational values).

The third result highlights inequalities. AI systems are not introduced into a vacuum; they reflect existing social and economic conditions. Internationally, Williamson points out that AI often benefits well-funded schools while leaving disadvantaged communities behind. This creates a risk of widening the gap between those with access to advanced technology and those without. Russian scholars confirm that this is not an abstract problem. In a country with stark differences between urban and rural education, Soldatova warns that rural schools often lack the infrastructure to implement AI effectively. The outcome is a sobering one: while AI is frequently promoted as a democratizing force, in practice it may reproduce or even intensify inequality.

The results of this study highlight both the potential and the risks of introducing artificial intelligence into education, but what they ultimately reveal is that the technology itself is not the decisive factor. Instead, what matters most are the ethical frameworks and pedagogical philosophies that guide its use. The discussion, therefore, turns on how educators, policymakers, and societies can navigate these challenges responsibly, ensuring that AI serves human learning rather than undermining it.

One of the clearest themes across the literature is the importance of trust and transparency. AI systems are only as reliable as the data and algorithms that drive them, yet most teachers, students, and even administrators have little insight into how these systems actually function. Scholars such as Selwyn and O'Neil caution that this "black box" problem risks creating blind faith in technology. Russian voices, such as Dmitrieva, echo this concern, insisting that educators must retain their moral responsibility rather than deferring to machines. In practice, this means that institutions must demand transparency from AI providers, ensuring that

decisions made by algorithms can be explained and questioned. Trust cannot be built on technical efficiency alone; it requires openness and accountability.

The discussion also returns to the role of the teacher, which stands at the heart of the pedagogical debate. While some see AI as a liberating force, taking over routine tasks so teachers can focus on what matters most, others fear that such rhetoric may justify cost-cutting measures and the deskilling of educators. The international and Russian perspectives converge on one key point: teachers are irreplaceable as mentors, cultural transmitters, and ethical guides. AI may support their work, but it cannot replicate empathy, intuition, or the ability to inspire. Protecting teacher autonomy, therefore, is not just a professional concern—it is an ethical imperative if education is to remain human-centered.

Equity forms the third pillar of this discussion. The findings confirm that AI has the potential to either bridge or widen educational gaps. On the one hand, adaptive learning platforms could help struggling students catch up at their own pace. On the other hand, access to such platforms often depends on resources that are unevenly distributed across regions and schools. International researchers, such as Williamson, stress the global risks of educational stratification, while Russian scholars like Soldatova bring this concern closer to home, describing the stark divide between urban and rural contexts. Addressing this challenge requires deliberate policy action: investment in infrastructure, teacher training, and digital literacy. Without such measures, AI will simply mirror existing inequalities rather than solving them.

In sum, AI in education offers both opportunities and dangers. The debate is not about whether the technology will transform learning—it already is—but about the values that will guide this transformation. Russian and international scholars alike remind us that education is not simply a technical process but a moral and cultural practice. To ensure that AI contributes to this practice rather than distorting

it, we must approach its adoption with humility, critical reflection, and above all, a commitment to keeping education human-centered.

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