

Chapter 19

Educational Leadership and AI in the Post- COVID-19 Era: Ethical Challenges and Opportunities in Catalonia

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ABSTRACT

The integration of artificial intelligence (AI) in education has accelerated, especially during the COVID-19 pandemic, as institutions adopted remote and hybrid learning solutions. In Catalonia, a region known for innovation, AI has been applied to personalized learning, grading systems, and virtual teaching assistants. However, this rapid adoption raises ethical concerns, including data privacy, algorithmic bias, and digital inclusion. While AI can enhance personalized education, it risks exacerbating inequalities if technology and data are mismanaged. This chapter examines the ethical challenges of AI in education through the lens of Catalonia's leadership, emphasizing equity and inclusion. By analyzing case studies, it highlights strategies to address privacy, fairness, and ethical AI use, particularly for marginalized groups. The chapter provides insights for global educators and policymakers on balancing innovation with ethical responsibility, advocating for an approach that promotes technological progress while safeguarding equity, fairness, and transparency.

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1. INTRODUCTION

The COVID-19 pandemic served as a transformative event in the education sector, revealing both the immense potential and inherent limitations of digital technologies. As education systems worldwide transitioned to remote learning, educators, students, and administrators were thrust into an unprecedented reliance on technology. This rapid shift underscored the essential role of digital tools in maintaining educational continuity. Among these technologies, Artificial Intelligence (AI) emerged as a particularly significant driver of educational transformation, offering solutions such as personalized learning, automated grading systems, and adaptive platforms (UNESCO, 2021). However, the accelerated adoption of AI also exposed deep-rooted challenges related to equity, privacy, and digital access, requiring urgent attention from educational leaders.

Catalonia, an autonomous community in northeastern Spain, has long been recognized as a leader in educational innovation. The region's commitment to equity and inclusion is reflected in its proactive stance on integrating digital tools into education, even prior to the pandemic (Bosco et al., 2016). Early initiatives like the eduCAT 1×1 program equipped students and educators with essential technological resources, laying the groundwork for broader AI integration. Yet, the pandemic amplified the scale and scope of AI adoption, highlighting both its potential benefits and its ethical dilemmas. Catalanian educational leaders found themselves navigating the dual responsibility of ensuring the effectiveness of AI systems while upholding ethical principles of fairness and inclusivity. The task was particularly critical for marginalized communities, who remain disproportionately affected by digital inequalities (Alonso et al., 2014).

The transformative potential of AI in education cannot be overstated. Adaptive learning platforms, for instance, offer personalized experiences by dynamically tailoring content to individual student needs, enhancing engagement and learning outcomes. Similarly, AI-powered grading systems provide real-time feedback and reduce administrative workloads for educators, allowing them to focus on strategic instructional tasks. Despite these advantages, Selwyn (2019) reminds us that these technologies are not value-neutral. Instead, they reflect the socio-economic and cultural contexts in which they are developed, raising critical concerns about transparency, accountability, and equity in AI-driven education systems.

Catalonia's experience illustrates how these challenges are further compounded by ethical considerations around data privacy and algorithmic bias. AI systems rely on large datasets, often sourced from student information, to operate effectively. While the General Data Protection Regulation (GDPR) provides a robust legal framework for safeguarding such data, its application to AI in education requires continuous vigilance and adaptation. As the Autoritat Catalana de Protecció de Dades (2022) has

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