

From Digital Divide to AI Divide: How Artificial Intelligence Could Reshape Inequality in Higher Education

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Abstract

Artificial Intelligence (AI) is increasingly transforming higher education. It can create new possibilities for expanding educational opportunities, while also raising concerns about reproducing existing inequalities. This essay begins by exploring how AI can support personalised learning and inclusion. It conceptualises the AI divide as a set of interconnected dimensions, including access to AI and the quality of that access, AI literacy, and effective use. It then examines how the digital divide is becoming an AI divide that extends beyond access to technology to encompass differences in affordability, infrastructure, institutional support, and the capacity to translate AI access into educational benefits. It also highlights how unequal access and capabilities can produce differentiated educational outcomes as technological inequalities intersect with social inequalities such as class, caste, gender, disability, language and geography. It concludes that ensuring equitable outcomes requires inclusive, social justice-oriented policies that create the conditions for all students to meaningfully benefit from AI in higher education.

Keywords: *Artificial intelligence, Higher Education, Digital divide, AI literacy, Educational inequality*

Introduction

According to the Organisation for Economic Co-operation and Development (OECD, 2001), the term ‘digital divide’ refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard to their opportunities to access information and communication technologies (ICTs).” This divide is visible in almost all socio-economic spheres. United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2025) notes that about one-third of the world’s population lacks access to the internet and related infrastructure. This is also reflected in how digital technologies have changed access to higher education. Digital technologies are a means of expanding educational opportunities, but their benefits are unevenly distributed. The discourse of the digital divide in higher education has moved beyond accessibility to digital services and now encompasses differences in digital skills, affordability, quality of connectivity and the ability to translate technological access into tangible benefits such as socio-economic mobility (UNESCO, 2025).

The evolution of Artificial Intelligence (AI) adds a new dimension to these existing inequalities. The 2025 Trust, Attitudes and Use of Artificial Intelligence study, conducted by the University of Melbourne and KPMG across more than 48,000 people in 47 countries, found that 66% of respondents regularly use AI, which points to the rapid diffusion of AI across societies. This widespread adoption does not guarantee an equal capacity to benefit from AI, as the study also identifies differences in AI understanding, training and confidence across populations (Gillespie et al., 2025). Eddine et al. (2026), in their paper titled “Systematised evidence mapping of generative artificial

intelligence (GenAI) and digital divide phenomena in higher education,” identify infrastructural constraints, limited AI literacy, affordability and unequal institutional support as barriers to equitable AI adoption, particularly in the context of the Global South. Thus, this essay aims to go beyond the question of accessibility to AI to examine who can access, understand and effectively use AI to convert it into educational advantage.

Can AI bridge educational inequalities?

AI has the potential to reduce some of the inequalities that have historically shaped access to education. Unlike conventional digital technologies that mainly focus on access to information, AI can offer personalised tutoring, customised feedback, writing assistance, translation and learning support. These functions provide students with academic assistance that was traditionally dependent on access to well-resourced institutions, teachers or private tutors. A systematic review of 75 studies exploring the role of AI in bridging the educational divide found that personalised learning was identified as an opportunity in 60% of the studies reviewed, followed by teacher assistance and efficiency (51%) and expanded access and inclusion (44%) (Mimoudi, 2025). AI, thus, can reduce some barriers to educational support for students who lack access to individualised academic resources. However, Mimoudi (2025) cautions that these benefits will not automatically translate into equitable outcomes, as differences in infrastructural access, AI skills and institutional capacity can still shape who can take advantage of them. Therefore, AI has the potential to bridge educational inequalities, but this potential is linked to structural factors such as the institutional contexts in which this technology is introduced.

AI access itself is unequal

First of all, access to AI technologies is not uniform. As mentioned earlier, Eddine et al. (2026), in their paper, argue that AI can “overlay, reproduce, or reconfigure” existing digital divides. Their review identifies connectivity, AI literacy, economic barriers and the absence of inclusive institutional policies as important barriers to equitable AI adoption. They also highlight emerging forms of inequality associated with subscription-based models that provide access to more advanced computational features. The AI divide therefore operates at several interconnected levels: first, whether students have a reliable internet connection; next, whether they can afford better AI services; then whether they possess the skills required to use them; and lastly, whether their institutions provide guidance and support.

AI access needs to be understood beyond technological access. UNESCO (2025) highlights how AI can reinforce existing disparities of gender, class, caste, geography and digital access, and demonstrates that students enter the AI ecosystem from unequal social positions. For instance, UNESCO draws attention to deaf and hard-of-hearing learners whose educational participation may be constrained by language deprivation, and this highlights the need for AI systems that are multimodal and co-designed with affected communities (UNESCO, 2025). Thus, AI access needs to be understood beyond technological access, covering the intersection of class, caste, gender, disability, language, geography and digital infrastructure.

From access to capability: The emergence of an AI divide

The discourse of access to devices and internet connectivity is moving towards how students actually use AI to enhance their existing capabilities and achieve meaningful outcomes. Beckman et al. (2025) studied 194 university

students and identified different profiles of AI users based on their levels of digital and AI literacy. Beckman et al. (2025) used Long and Magerko's (2020) definition: "AI literacy is a set of competencies that enables individuals to critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace". This definition helps summarise the study's results: students with lower AI literacy were more cautious about AI, while students with higher AI literacy were more likely to use it productively. Even access to similar technology can produce different outcomes because of differences in knowledge and confidence towards that technology (Beckman et al., 2025).

Bourdieu's (1986) concept of cultural capital helps explain why formally equal access to educational resources does not necessarily result in equal educational outcomes. The unequal distribution of knowledge, competencies and dispositions also shapes individuals' ability to navigate educational environments. Applying this to the present context, two students could have access to the same AI platform while possessing different abilities to formulate effective prompts, critically evaluate outputs, identify misinformation and integrate AI into academic work. AI could thus become another mechanism through which existing forms of advantage are converted to educational privileges.

The Global South: Beyond a simple North-South divide

In a systematic review of 71 empirical studies, Olohunfunmi et al. (2026) compared AI use in higher education across the Global North and Global South and found that although similar AI tools such as ChatGPT are adopted across both regions, they are used in substantially different ways. Higher education institutions in the Global North demonstrated pedagogical experimentation and curriculum-level innovation, supported by stronger infrastructure and institutional policies. In contrast, the Global South faced infrastructural and policy development constraints, which resulted in more pragmatic and task-oriented forms of AI use, such as writing assistance, summarisation and grammatical error correction (Olohunfunmi et al., 2026).

However, describing the Global South as technologically "behind" is an oversimplification of emerging evidence. Nguyen and Perkins (2026), in their scoping review of 75 studies examining perceptions of AI across the Global South, identify that AI creates opportunities in learning and teaching alongside persistent challenges related to infrastructure, upskilling and contextual conditions. They also find that equity considerations have received comparatively little research attention, despite their importance for inclusive education (Nguyen & Perkins, 2026). This indicates that analysing the impact of AI on higher education requires moving beyond questions of adoption in the Global South to examine who benefits from adoption, under what conditions, and whose educational needs are represented in the process. This prevents the AI divide from being reduced to a merely geographical distinction between technologically advanced and technologically lagging countries.

From digital divide to AI divide

The AI divide cannot be construed as a separate category altogether, but can instead be understood as both a consequence and an extension of existing inequalities. Eddine et al. (2026) demonstrate how AI interacts with established digital divides; Beckman et al. (2025) show that differences in AI literacy shape students' ability to use AI productively; and Nguyen and Perkins (2026) highlight the contextual challenges surrounding AI in the Global South. At the same time, Mimoudi (2025) demonstrates that AI possesses potential for personalised learning and

inclusion, while the KPMG study shows that widespread AI adoption should not be confused with equal AI capability (Gillespie et al., 2025).

The emerging AI divide can therefore be conceptualised as an interconnected chain:

Digital access → AI access → quality of AI access → AI literacy → effective use → educational benefit

This chain is significant because inequality may emerge at any stage. A student may lack reliable internet access; another may have connectivity but cannot afford advanced AI tools; and another may have access but lack the AI literacy required to evaluate outputs. Thus, access to AI does not necessarily translate into equal access to its educational benefits.

Recognition of these inequalities does not mean that unequal outcomes are inevitable; rather, it highlights the importance of how AI is designed, governed and integrated into educational systems. UNESCO (2025) argues for an equity-centred approach to AI in education which emphasises human agency, social justice and inclusion. Ensuring equitable access, strengthening AI competencies, supporting educators and institutions, and incorporating the perspectives of marginalised communities can create genuine possibilities for inclusion. The focus should be on both providing AI access and creating conditions in which all students have the capabilities to benefit from it. Thus, through deliberate and inclusive policy action, AI can create an opportunity to reshape educational inequalities and broaden participation in the benefits of technological change.

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