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Editorial

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University in the AI era

Andrea Stazi [1,2*]

[1] San Raffaele University of Rome, Rome, ITALY
[2] National University of Singapore, SINGAPORE
***Corresponding Author:** andrea.stazi@uniroma5.it

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ABSTRACT

AI offers many opportunities to enhance higher education: access content at any time, from any location, in various languages and formats tailored to individual needs; provide qualitative and timely feedback; create more engaging, interactive and even personalized learning experiences; enhance teacher and researcher productivity, e.g., helping/automating the grading process, or assisting researchers with summarizing sources, adding citations to essays etc.; improve accessibility for disadvantaged people. However, AI in higher education also faces significant challenges: over-reliance on AI which may lead to a lessened ability to think critically; accuracy, reliability, and ethical use of AI in assessment; potential for biases in AI-generated content; importance of maintaining data privacy; AI's limited understanding of context; cost and logistical challenges of infrastructure; educators training and development; last but not least, resistance to change. Embracing a culture of experimentation, continuous improvement, and thoughtful adaptation, it seems possible–or rather, by now unavoidable–to collaboratively shape an education system that harnesses the power of AI for all stakeholders in the education ecosystem, starting with students.

Keywords: artificial intelligence, education, university, EdTech, opportunities, challenges

INTRODUCTION

In the era before the widespread adoption of digital technologies, universities faced a landscape where their strategic options were more restricted and less complex compared to the present digital age.

The prevailing academic model encouraged universities to largely mirror a standard, universal structure, with few deviations from this norm.

Given limited resources, universities found themselves in a competitive environment where key performance indicators for success and access to these resources were primarily their brand reputation, the size of their financial endowments, and the number of students they enrolled.

In the digital age, universities face vast strategic options, and those that make clear choices with community support will achieve successful digital transformation, leading to greater efficiency and a focus on their evolving missions. The main hurdle is resistance to change (Rousseau, 2023, pp. 28-29).

The advent of first digital and now artificial intelligence requires that students, educators and researchers rapidly acquire a new mindset, knowledge and skills to effectively participate in this evolving landscape (Akhmadieva et al., 2024, p. 5 ff.; Wu et al., 2025, p. 4 ff.). Landscape that should also emphasize the importance of considering human well-being when integrating AI into higher education as a fundamental step (Klimova & Pikhart, 2025, p. 3). Today, across all sectors, digital and AI are increasingly considered essential requirements for entry and success in the labor market (Dubai Department of Economy and Tourism, 2025).

In such a scenario, the traditional roles of universities in attracting future leaders, cultivating critical thinking, and conveying universal values are facing significant disruption due to the overwhelming changes brought about by the digital revolution, which has also fundamentally altered the established trajectory of universities.

With digital, data, information, knowledge, have become significantly more accessible and affordable, effectively ending the university's near-exclusive control over their preservation and dissemination (Rousseau, 2023, p. 7).

First, the rise of online courses and digital platforms has democratized access to education, offering alternatives to the traditional university model.

More recently, and above all, technologies like AI tools and generative AI allow learners to access content at any time, from any location, in various languages and formats tailored to their needs.

Currently, the prevailing structure of universities involves them primarily functioning as extensive teaching and research

entities, characterized by numerous facilities accommodating specialized academics and students.

These institutions are supported by a workforce of research and administrative personnel, who collectively contribute to the generation and global distribution of knowledge.

A core function is also educating skilled graduates who enhance the institution's standing and contribute to various sectors of society.

Depending on the countries, universities can support themselves through government funding, gifts from their donors or alumni, or generating income through tuition fees from students, which is directly linked to their provision of degrees and certifications that signify the acquisition of knowledge and skills (Rousseau, 2023, p. 18).

In recent years, major international organizations have been dealing with the impact of the digital revolution on the university operational model (Matkovic et al., 2018, p. 9270 ff.; Rof et al., 2020, pp. 1-15; Saykılı, 2019, pp. 1-12). Ernst & Young's (2012) study on "university of the future" identified, already in 2012, five major trends that would impact the university sector and this was well before COVID-19 (Ibrahim & Dahlan, 2016). These trends are as follows:

(1) the democratization of knowledge and its access,

(2) a market that is now less captive and more uncertain sources of revenue,

(3) the emergence of digital technologies,

(4) greater global mobility, and

(5) pressure from the industry, which has become both a competitor and a partner.

Ernst & Young's (2012) analysts have identified three broad lines of possible evolution of operating models that would enable universities to cope with a future that has become so complex. They are as follows:

(1) streamlined status quo model,

(2) dominant niche player model, and

(3) innovator model.

1. Universities that choose to maintain their current large scale in both teaching and research will need to modernize how they interact with students and handle administrative tasks, as well as reconsider their relationships with partners, students, and the broader community.

   Many experts believe this "streamlined status quo" approach will be challenging because these institutions will need to generate significant income on their own and adopt a more business-like strategy to fund their ongoing operations while also investing in new technologies. Recent analyses confirm that institutions are adopting explicit guidelines on the use of generative AI to ensure both innovation and integrity (An et al., 2025, p. 2 ff.; Jin et al., 2025, p. 10 ff.).

2. The "dominant niche players" represent a segment of higher education that will include both existing universities and new educational providers that will significantly alter their services and operational methods.

   These entities will cause substantial disruptions and fundamental changes in the sector by focusing their offerings on specific groups of students, such as international students, professionals within particular industries, or those seeking executive education.

3. Universities can expect significant upheaval from "disruptors" in both the private and public sectors. These entities will fundamentally challenge traditional higher education across various academic areas and student populations (Rousseau, 2023, p. 21).

Massive open online courses like Coursera, Open Educational Resources, and platforms such as EDX and Udacity represent examples of entities that have already emerged as "disruptors" in the higher education landscape.

The digital revolution was already significantly affecting the academic world even before the COVID-19 pandemic. The term "EdTech", which encompasses all digital technologies and novel business models within the realm of education, was experiencing rapid growth.

These digital technologies possess the capability to enhance efficiency, introduce new standards, facilitate broader access to knowledge, and transform traditional learning methodologies.

The COVID-19 pandemic dramatically accelerated the academic world's shift towards digital learning, transforming academia into a "digital learning laboratory" for various stakeholders. This sudden transition impacted faculty, students, administrators, researchers, and their staff.

During the pandemic, the academic community gained firsthand experience with the potential and limitations of digital communication, going beyond just understanding new devices and software. This rapid shift led to questions about the economic value and cost of traditional degrees, the need to optimize the virtual customer experience, and the requirement to adjust business models in response to the crisis.

Despite the significant disruption, the majority of universities adopted a "streamlined status quo" operating model (Rousseau, 2023, p. 22). They utilized digital tools to continue research and teaching but largely aimed to return to pre-pandemic practices as soon as possible, a pattern observed in many private and public organizations. Few universities embraced more radical transformations like the "dominant niche player model" or the "disruptive innovator model" in their operations or mission.

A 2020 survey of UK university professors revealed significant dysfunctionality and disturbance to their pedagogical roles and personal lives due to online migration. These professors also expressed concerns about student recruitment, market sustainability, the academic labor market, and local economies. They worried that the move to digital technology could threaten their jobs, with some institutions already shifting over 25% of teaching online (Watermeyer et al., 2021, pp. 623-641).

The World Economic Forum, in July 2020, identified three key messages from COVID-19 for the academic community (Martin-Barbero, 2020):

1. Developing a virtual culture requires imaginative and creative implementation, as well as open leadership and an innovative mentality.
2. Learning technology should be viewed as an academic opportunity, not just a utility, emphasizing the importance of instructional design, multimedia production, and data analytics.
3. Scholars across all disciplines need to be motivated and well-equipped to reconfigure and adapt their courses and programs for an uncertain future.

However, the numerous advantages of making universities digital necessitate considerable financial and resource allocation from the institution, its professors and academic staff, and its students (Rousseau, 2023, p. 24; Saykılı, 2019, pp. 1-15).

Digitizing universities requires reconfiguring physical spaces, establishing technological infrastructure and technical support, acquiring equipment and digital resources, and providing training for all members of the community. These capital and operational expenses will necessitate significant funding.

Universities will simultaneously encounter growing competition from the EdTech industry, which can provide cheaper and more adaptable online learning, as well as compete for qualified digital professionals in areas like teaching, research, and administration.

The professor's role will evolve from a primary information provider, or "sage on stage", to a facilitator of learning and skills, or "guide on the side". This shift, influenced by digital and AI tools, will bring about significant changes in the teaching environment for both professors and students.

Professors will increasingly focus on guiding students, developing critical thinking, and designing AI-enhanced learning experiences. Empirical findings indicate that generative AI can promote mastery-oriented learning and deeper student engagement (Lee et al., 2024, p. 3 ff.; Pallant et al., 2025, p. 2 ff.). This transition signifies a move from knowledge transmission to skill development and application in higher education.

Students must develop skills in learning, innovation, and basic IT. This necessitates critical thinking, problem-solving, communication, and a degree of numeracy.

These new competencies are in addition to the need for strong knowledge in traditional disciplines like sciences, arts, humanities, and philosophy, making education a lifelong pursuit rather than a brief program.

AI tools can play a role in developing some of these skills, such as shifting the focus from information collection to analysis and creation, but over-reliance on AI could hinder the development of critical thinking.

If universities are able to embrace the opportunities while navigating the challenges of the digital revolution, they are uniquely positioned to lessen the income and knowledge disparities created by that (Rousseau, 2023, p. 30 ff.).

This is because the digital realm, being centered on data, information, and knowledge, is inherently the domain of academics–professors, researchers, and students.

The digitization of education presents a distinct chance to broaden accessibility for a larger population. Issues such as high costs, geographic limitations, and biases within institutions against minorities are challenges that can be mitigated through change management and the application of technology.

Universities need to redefine their core purpose and mission by placing themselves at the forefront of addressing the significant challenges facing today's civilizations and societies.

Their primary role should be to act as a guiding light in navigating the complexities of the modern world.

This means their mission should evolve beyond general research and teaching to explicitly include these major global issues, and academic leaders must actively contribute to the redefinition of purpose for all types of organizations, both private and public.

The university's future vision moves away from being just a physical campus "upstairs and alone" to becoming a central "community at the center of interconnected ecosystems".

In this new model, the university, in partnership with other entities, will focus on ensuring "the authenticity of facts, scientific rigor and objectivity", while also providing "a framework for vigorous and respectful debate".

The operational model will likely be a hybrid of virtual and face-to-face interactions, heavily leveraging EdTech and other technologies within these ecosystems and collaborations, from generative AI to the metaverse, etc. (Ilic et al., 2024; Khine, 2024, pp. 467-570; Lin et al., 2022, p. 223 ff.; Liebowitz, 2022, p. 4 ff.).

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