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8. THE AI TURN IN HIGHER EDUCATION: FROM LABOUR MARKET TO EMPLOYMENT CHALLENGES

by Danilo Boriati*, Mariangela D'Ambrosio**

Abstract: In the contemporary educational landscape, Artificial Intelligence (AI) emerges as both a catalyst for innovation and a potential source of inequality (Boriati e D'Ambrosio, 2025). This study investigates the relationship between the use of AI tools and the processes of studying, writing, and producing knowledge among university students. Grounded in a socio-educational framework, the research aims to explore whether AI functions as an inclusive technology that democratises access to learning, or whether it reinforces existing educational divides and social inequalities (Warschauer, 2004; Couldry e Mejias, 2019; van Dijk, 2020). These perspectives enable a multidimensional understanding of how AI uses intersect with cultural capital, digital competence, and educational-labour opportunity (Archer, 2007; Livingstone, 2009). Preliminary reflections suggest that the integration of AI in education cannot be understood merely in technological terms but must be situated within institutional and social contexts that either promote or limit inclusion. The capacity of AI to enhance learning depends on students' access to resources, institutional support, and the development of critical digital literacies (DigComp 3.0).

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Although the article is the result of a collaborative reflection, formally introduction, paragraphs 3, 3.1 and conclusions are attributed to both authors, while paragraphs 1 and 4 are attributed to Mariangela D'Ambrosio and paragraph 2 to Danilo Boriati.

Universities and schools are thus called to act not only as sites of technological adoption but also as spaces for the social negotiation of digital responsibility and epistemic justice (Facer e Selwyn, 2021). In conclusion, AI should be viewed not merely as a neutral tool but as a social artifact embedded in power relations (Foucault, 1980; Castells, 1996; Feenberg, 1999), capable of both expanding and constraining educational inclusion. The challenge for educators and policymakers lies in transforming AI from a potential driver of inequality into an instrument of democratic learning and social empowerment.

Keywords: Artificial Intelligence (AI); Education; Inclusion; Inequality; Digital Literacy.

Abstract: Nel panorama educativo contemporaneo, l'Intelligenza Artificiale (IA) emerge sia come catalizzatore per l'innovazione sia come potenziale fonte di disuguaglianza (Boriati e D'Ambrosio, 2025). Lo studio intende indagare la relazione tra l'uso degli strumenti di IA e i processi di studio, scrittura e produzione di conoscenza tra gli studenti universitari. Basata su un quadro socio-educativo, la ricerca mira a esplorare se l'IA funzioni come una tecnologia inclusiva che democratizza l'accesso all'apprendimento, oppure se rafforza le divisioni educative esistenti e le disuguaglianze sociali (Warschauer, 2004; Couldry e Mejias, 2019; van Dijk, 2020). Tali prospettive permettono una comprensione multidimensionale di come gli usi dell'IA si intersecano con il capitale culturale, la competenza digitale e le opportunità di istruzione e lavoro (Archer, 2007; Livingstone, 2009). Le riflessioni preliminari suggeriscono che l'integrazione dell'IA nell'istruzione non può essere compresa solo in termini tecnologici, ma deve essere inserita in contesti istituzionali e sociali che promuovono o limitano l'inclusione. La capacità dell'IA di migliorare l'apprendimento dipende dall'accesso degli studenti alle risorse, dal supporto istituzionale e dallo sviluppo di alfabetizzazioni digitali fondamentali (DigComp 3.0). Università e scuole sono, quindi, chiamate ad agire non solo come luoghi di adozione tecnologica, ma anche come spazi per la negoziazione sociale della responsabilità digitale e della giustizia epistemica (Facer e Selwyn, 2021). Alla luce di quanto detto, l'IA dovrebbe essere

interpretata non solo come uno strumento neutrale, ma come un artefatto sociale incorporato nelle relazioni di potere (Foucault, 1980; Castells, 1996; Feenberg, 1999), capaci sia di espandere che di limitare l'inclusione educativa. La sfida per educatori e responsabili politici risiede nel trasformare l'IA da potenziale motore di disuguaglianza a uno strumento di apprendimento democratico e di empowerment sociale.

Parole chiave: Intelligenza Artificiale (IA); Istruzione; Inclusione; Disuguaglianza; Alfabetizzazione digitale.

Introduction

Artificial intelligence (AI) is increasingly entwined with higher education, shaping not only teaching and learning practices but also the preparation of students for future professional environments. From a sociological standpoint, AI cannot be understood as a neutral technology; its adoption and significance are deeply embedded within institutional structures, pedagogical conventions, and normative frameworks (Foucault, 1980; Feenberg, 1999; Latour, 2005). The distribution of digital, social, and cultural capital among students mediates access to AI and the capacity to leverage it for academic success, digital literacy and employability (Bourdieu, 1986; Couldry e Mejias, 2019; van Dijk, 2020).

Theoretical sociological perspectives on education – from classical functionalist approaches (Durkheim, 1922; Parsons, 1959) to contemporary critical frameworks (Giroux, 1983; Apple, 2004; Biesta, 2010) – highlight how technological adoption intersects with processes of cultural transmission, agency, and social reproduction, while simultaneously shaping the development of critical digital competencies necessary for meaningful participation in academic and professional contexts.

In this context, the integration of AI is not only a matter of

efficiency or innovation but also one of equity, reflexivity, and the ethical negotiation of knowledge within academic institutions. Universities can thus function as sites where digital responsibility, digital literacy, and epistemic justice are enacted, shaping both learning trajectories and future labour market opportunities (Facer e Selwyn, 2021).

To examine these dynamics, this study adopts a quantitative exploratory comparative approach across telematic and traditional universities in Italy, exploring how institutional contexts influence AI adoption, its social significance, the cultivation of (IA) digital literacy[1], and its relation to academic and professional development.

By linking quantitative evidence with a socio-educational lens, the research seeks to illuminate whether AI serves as an inclusive instrument for learning, digital competence, and employability or as a mechanism that reinforces existing inequalities within educational and labour market structures.

1. The "AI revolution" in European and Italian education. A sociological perspective

Artificial intelligence is profoundly reshaping higher education. Unlike dramatic disruptions, these changes are incremental, embedded in daily academic life through tools that assist teaching, assessment, and administration. While AI promises

[1] *Digital literacy* can be understood as the combination of knowledge, skills, and critical awareness that allows individuals to navigate, evaluate, and produce information in digital environments. It involves not only the technical ability to operate digital tools but also the reflective capacity to assess the reliability, ethics, and social implications of digital content. In educational and professional contexts, digital literacy supports meaningful engagement with technologies such as AI, fostering both academic achievement and employability (Eshet-Alkalai, 2004; Chiu *et al.*, 2024).

efficiency, personalised learning, and new research opportunities, it simultaneously challenges the traditional roles of academics, raising questions about de-skilling, workload distribution, and the human dimension of education. The transformation also pressures assessment methods, as conventional exams may no longer reliably reflect student knowledge in an AI-augmented environment. Ethically, AI introduces concerns around fairness, access, and academic integrity, making reflective, value-driven policies essential. Ultimately, the "quiet revolution" of AI offers both a test and an opportunity: to rethink the purpose of higher education, balancing technological innovation with the cultivation of critical thinking, social responsibility, and equitable access[2].

About equity in contemporary Europe, the integration of AI tools in higher education risks deepening existing inequalities rooted in uneven access to digital infrastructure and socio-economic capital[3].

According to the *GoStudent* "*Future of Education 2025*" report, an average of 85% of students in Europe say they have used AI tools for learning; in the same report, around 26% of European students say they have "used at least once" AI-based teachers or tutors[4].

Across six European countries[5], the survey shows that most

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[2] See: Pireci Sejdiu N. and Sejdiu S. The quiet transformation of higher education in the AI era, *Open Res Europe* 2025, 5:249 (https://doi.org/10.12688/openreseurope.20715.1).

[3] See also: https://futurium.ec.europa.eu/es/european-ai-alliance/community-content/ai-higher-education-mapping-key-guidelines-recommendations, https://digital-strategy.ec.europa.eu/it/policies/european-approach-artificial-intelligence and https://digital-strategy.ec.europa.eu/en/policies/europes-digital-decade (last see on 31 march). And https://epale.ec.europa.eu/en/resource-centre/content/policy-brief-integration-artificial-intelligence-ai-higher-education

[4] See the full Report at: https://www.gostudent.org/static/documents/en-gb/education-report/2025.pdf (last seen on 31 March 2026).

[5] Austria, Germany, Spain, France, Italy and the United Kingdom. The research involved 5,859 children, aged 10 to 16 at the time of the survey (November -

students aged 10-16 already interact with AI tools, using them for writing, language learning, mathematics problem-solving, and research (GoStudent, 2025). This widespread adoption is driven less by formal educational channels and more by self-directed learning and digital exposure, highlighting a fundamental shift in how young Europeans engage with knowledge. The enthusiasm of students contrasts sharply with the readiness of institutions and teachers. About 75% of educators report receiving no formal AI training, and many students express a desire for more knowledgeable guidance (Ibidem)[6].

In Italian classrooms[7], the integration of AI-based learning tools remains limited, with less than half of students (44%) having access; this places Italy at a relative disadvantage compared to other European countries. The situation is further complicated by gaps in teacher training: two-thirds of educators have not received instruction on AI, despite more than half recognising its growing importance for their students' future careers[8].

In general, «Italy lags behind Europe in terms of citizens' digital skills» (ISTAT, 2025:56)[9].

December 2024). *Ibidem*.

6 On 300 Teachers. *Ibidem*.

7 Involved: 1,000 parents / guardians, 1,000 children and 50 teachers. *Ibidem*.

8 More details on: https://www.orizzontescuola.it/italia-ultima-in-europa-per-istruzione-orientata-al-futuro-49-degli-studenti-non-si-sente-preparato-mancano-formazione-sullia-e-competenze-digitali/ and https://www.ansa.it/osservatorio_intelligenza_artificiale/notizie/societa/2025/03/20/70-studenti-non-riceve-formazione-in-ia-ma-l89-la-usa_0538b1dc-cf3e-4f70-a4da-88ff7c3d101e.html (last seen on 31st march 2026).

9 See: https://www.istat.it/wp-content/uploads/2025/11/02-Istruzione-e-formazione.pdf and now see the new Dig.Comp. 3.0 as the European framework for digital competencies, designed to identify the skills individuals need to live, learn, and work in increasingly digital societies. Beyond technical proficiency, it emphasises critical thinking, ethical awareness, information management, communication, collaboration, and problem-solving in digital contexts. The framework organises competencies into five areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving. By providing a

Although a large share of students' reports using AI tools do not automatically indicate that they possess solid digital or AI literacy (Boriati, 2025): many young people describe themselves as capable of interacting with ready-made applications but not of understanding how such systems are built or how they function conceptually (Ibidem). This marks a widening divide between simple operational use and the development of critical, reflective competence[10].

This disparity is compounded by the limited and uneven presence of AI within formal educational settings, which not only affects learning opportunities but also shapes students' preparedness for an increasingly digitalised and competitive labour market.

In Italy, indeed, access to AI is still fragmented: even in countries with advanced technological infrastructures, AI is not consistently incorporated into teaching practices, curricular pathways, or institutional programs. Students therefore often depend on informal learning, which tends to amplify (pre-existing) inequalities (Sen, 1992; Warschauer, 2004; Couldry e Mejias, 2019; Bertagna e Barone, 2021; van Dijk, 2005; 2020; Martini e Sgambato, 2025; Boriati e D'Ambrosio, 2025)[11].

Differences also emerge across disciplinary fields: in fact, learners enrolled in engineering, the natural sciences, or architecture typically report more frequent and technically

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common language for education, workplaces, and policymakers, DigComp 3.0 supports the assessment, development, and recognition of digital skills across Europe. In: Cosgrove, J. and Cachia, R., *DigComp 3.0: European Digital Competence Framework* - Fifth Edition, Publications Office of the European Union, Luxembourg, 2025, https://data.europa.eu/doi/10.2760/0001149, JRC144121; https://publications.jrc.ec.europa.eu/repository/handle/JRC144121.

[10] See ISTAT (2025) in https://www.istat.it/wp-content/uploads/2025/05/RA-2025-volume-integrale.pdf, p. 82 and https://www.istat.it/wp-content/uploads/2025/11/02-Istruzione-e-formazione.pdf.

[11] See the results of our research on this theme.

sophisticated engagement with AI tools, whereas those in the humanities or arts tend to show more modest levels of adoption[12]. Such disciplinary asymmetries contribute to divergent opportunities for acquiring advanced AI-related skills (Dig.Comp3.0; Floridi, 2025) also related to gender, geographical area, family condition and socio-economics status (Bourdieu, 1986)[13].

So, these shortcomings in digital competence (connected to digital literacy) hinder the ability of schools to prepare young people for a labour market increasingly shaped by technology with structural factors that contribute to the problem[14].

All together, these trends point to systemic challenges in equipping students with the digital skills necessary to thrive in the modern workforce[15].

Sociologically, the uneven diffusion of AI skills mirrors broader inequalities in socio-cultural and digital capital, privileging students with greater resources and prior technological exposure while risking the exclusion of others (Di Bari, 2023).

While these innovations can support personalised learning,

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[12] On this topic, see the difference between the STEM (Science, Technology, Engineering, Mathematics) and the Social and Humanities Sciences. In Europe, see: https://www.deloitte.com/content/dam/assets-zone2/it/it/docs/events/2025/stem-observatory-2024-2025.pdf. While in Italy, STEM representation among graduates is limited (around 1 in 4), and female representation in this field is very low; at the same time, humanities/social sciences degrees account for a very significant proportion of the total. In https://www.istat.it/wp-content/uploads/2024/07/REPORT-livelli-istruzione.pdf

[13] The socio-cultural characteristics of the population are crucial in this analysis. See: https://www.istat.it/wp-content/uploads/2025/11/02-Istruzione-e-formazione.pdf and Gui, M. (2007). Formal and substantial Internet information skills: The role of socio-demographic differences on the possession of different components of digital literacy. *First Monday*, 12.

[14] See OECD, Education at a Glance 2025: Italy in https://www.oecd.org/en/publications/2025/09/education-at-a-glance-2025-country-notes_9749f4ff/italy_3f45a89b.html.

[15] See Sen's capability framework: AI-related skills can be interpreted as emerging capabilities: unequal access to such opportunities constrains individuals' freedom to develop and exercise valuable educational and professional trajectories.

they raise concerns about fairness, standardisation, and teacher workload and influence students' preparation for a labor market increasingly shaped by digital skills and AI-mediated competencies (Foucault, 1980; Castells, 1996; Giddens, 1994; Feenberg, 1999).

Using a sociological lens, AI is not a neutral technological instrument but part of a broader process in which technological systems and social practices co-evolve: the informal, self-directed adoption of AI among young people, for example, reflects shifting generational cultures of knowledge production, extending beyond traditional curricular boundaries (Winner, 1980). This "revolution" is therefore both technological and social, influencing norms, expectations, power relations across educational institutions and the labour market.

In conclusion, AI offers significant opportunities to enhance learning, personalising instruction, and support employability, but these benefits rely on coherent institutional strategies, teacher training, and comprehensive ethical and pedagogical frameworks. Without such measures, AI risks being superficially adopted, potentially reinforcing existing educational inequalities (Goastellec, 2011:71-82).

2. Re-configuring learning and work through AI. Sociological insights and "digital capital"

The integration of AI into higher education is profoundly transforming both learning processes and the preparation of students for professional life.

In this sense, the legal reforms and the growth of online education, regulated and accredited, have made online universities

a key part of the Italian system (ANVUR, 2025)[16]: in fact, the university system is currently composed of a variety of models such us state universities, traditional private universities, and online universities[17].

On one hand, this diversity offers new opportunities for access and flexibility, but carries with it the risk of accentuating inequalities, differences in quality and polarization in higher education[18]; on the other hand, it facilitates adaptation to labor market demands with an increasingly competitive and digitized labor sector, private and online universities often offer educational programs that are more tailored to the real demands of the job market, promoting greater employability[19].

In this framework, the rapid diffusion of AI across educational and professional contexts is reshaping the labour market and redefining the competencies required for employability. From a sociological standpoint, the concept of digital capital – understood as the combination of digital skills, access to technology, and the ability to mobilise these resources effectively (Cortoni, 2025) – has become a key determinant of social and economic opportunity (Ragnedda e Muschert, 2023) because the nature of AI in education demonstrates that technology and social practice co-evolve. AI does

16 See: https://www.anvur.it/sites/default/files/2025-09/ENG_Brochure_2025_ANVUR_sitoweb.pdf.

17 See: Title III, Chapter 2, Article 26, paragraph 5, of Law No. 289 of December 27, 2000 and activated in accordance with the provisions of the Ministerial Decree of April 17, 2003, known as the "Moratti-Stanca Decree." There are 11 telematic universities in Italy. See: https://www.mur.gov.it/it/aree-tematiche/universita/le-universita/universita-telematiche.

18 Also, due to the unevenness of the educational offering.

19 There is also a paradox to consider: the fact that online universities are particularly useful for those who work or need to balance study and life (and these same people are often already involved in productive contexts) risks creating a sort of "third way" in the university system: no longer just public vs. private, but "traditional vs. online-professional," with implications for social capital, networks, academic identity, and post-graduation opportunities.

not simply deliver content; it reshapes interactions, redistributes agency, and transforms institutional practices (Latour, 2005). Digital platforms and online curricula, used across universities, challenge traditional socio-pedagogical structures and communication codes within higher education institutions (Luhmann, 1995).

Individuals endowed with higher levels of digital capital, if and when supported by the same educational and training contexts, can navigate AI-driven tools and platforms more efficiently, leveraging algorithmic systems for problem-solving, data analysis, and creative production. Those with stronger digital capital are better positioned to acquire such hybrid skills, creating a stratified labour market in which access to AI-mediated competencies becomes a form of social sorting (Bourdieu, 1986; Livingstone, 2009)[20].

In addition, professional success increasingly depends on the ability to navigate networks of collaboration mediated by digital tools, communicate across platforms, and interpret algorithmically filtered information[21]. Here, digital capital intersects with social and

[20] AI changes the very nature of work: tasks once performed manually are increasingly automated, while cognitive and data-intensive tasks become central. This requires workers to possess not only technical knowledge but also meta-cognitive abilities like the critical thinking, the adaptability and the capacity to learn continuously.

[21] In the digital age, the boundary between knowledge producers and consumers has collapsed: with AI-mediated platforms, users often act as prosumers, simultaneously creating and consuming content. This transformation reconfigures authority, authorship and epistemic legitimacy, making knowledge production a networked, collaborative and distributed process rather than a hierarchical one. The rise of AI-driven co-creation challenges traditional expertise, raising sociological questions about power, equity, and the social construction of knowledge in online environments. See: Sharples, M. (2023). Towards social generative AI for education: theory, practices and ethics. arXiv preprint in https://arxiv.org/html/2306.10063, Degli Esposti, P. (2012). Produzione, consumo, prosumerismo: la natura del capitalismo nell'era del 'prosumer' digitale. *Sociologia della comunicazione,* pp. 17-40; Degli Esposti, P. (2015). *Essere prosumer nella società digitale: produzione e consumo tra atomi e bit*. Milano: Franco Angeli.

cultural capital (Ibidem), emphasising that employability is not merely a matter of individual talent but is shaped by access to supportive networks, mentorship, and institutional infrastructures[22].

Knowledge acquisition is shaped not only by individual effort but also by social networks, institutional infrastructures, and socio-cultural-economic contexts. The integration of online learning and AI illustrates how educational innovations interact with broader social structures, generating new norms, expectations, and challenges for students and educators (Alvarez e Olivera-Smith, 2013; Chaker e Impedovo, 2020; García *et al.*, 2020; Brouwer *et al.*, 2020).

For all these reasons, to ensure broad access to AI tools and digital infrastructure is essential not only for individual employability, but also for supporting social cohesion and economic competitiveness in increasingly automated economies.

Only through such interdisciplinary analysis can we uncover how these competencies influence socio-economic trajectories, reinforce or mitigate social hierarchies, and transform the relational and institutional structures that govern professional life (Cortoni, 2025).

3. Experiences, study-work practices and knowledge (re)production. Research pathways: methodology and investigation tools

The central research questions of this study are: “how is AI

[22] But here is a difference: younger cohorts, often more familiar with digital environments, can transform AI from a tool into a medium of innovation, learning, and professional experimentation. Conversely, older or marginalized workers may face barriers to re-skilling, amplifying intergenerational and socio-economic divides in labour market outcomes.

being used in study practices and in the production of academic knowledge? And are educational institutions preparing students for critical and responsible engagement with AI technologies?".

Specifically, the research focuses on whether universities promote digital literacy, critical thinking, ethical awareness, and employability skills in relation to AI-assisted learning, or whether students are left to navigate this technological and occupational environment without adequate institutional guidance.

The theoretical framework draws on sociology of education, sociology and theories of social (also digital) reproduction (Bourdieu, 1986; Bernstein, 2000; Selwyn, 2019; Eynon, 2021), integrating critical data studies (Couldry e Mejias, 2019; Beer, 2019). Additionally, classical perspectives on the educational function of social integration (Durkheim, 1922; Parsons, 1959) and contemporary critical approaches (Giroux, 1983; Apple, 2004; Biesta, 2010) help situate AI within the broader processes of cultural transmission, agency, and power in education.

From a methodological point of view, the study adopts a quantitative approach involving university students from different socioeconomic and disciplinary backgrounds, both enrolled in online universities and traditional ones, with particular attention to their perceptions, expectations and preparedness regarding future employment.

Data was collected in December 2025 through a structured online questionnaire administered via *Google Forms*[23] that was

[23] Entitled "*Artificial Intelligence and study Practices: perceptions, uses, and critical reflections*". *Google Forms* was used to ensure standardized data collection, accessibility and efficient management of responses: in fact, online questionnaires are widely adopted in sociological research for reaching dispersed populations and reducing administrative costs, while also presenting potential limitations related to self-selection and the potential digital divide effects (Corbetta, 2014; Lombi, 2015) The instrument was pilot-tested to ensure clarity, reliability, and content validity. Participation was voluntary and anonymous, and respondents were informed about the purpose of the study and data protection procedures in accordance with ethical

selected for its accessibility, easy distribution and capacity to reach both students enrolled in telematic universities and those attending traditional higher education institutions.

The questionnaire, distributed to a non-probabilistic sample[24] of students, consisted of closed-ended and semi-structured items designed to explore students' attitudes toward AI, patterns of use in academic activities, perceptions of institutional support and perceived implications for employability. The following areas were investigated: A. *Socio-Demographic area*; B. *Study practices and use of AI area; C. Critical thinking and values area; D. Future (work) prospects and the role of institutions.*

In particular, the socio-demographic profile identifies a young professional, generally between 26 and 34 years old, residing in medium-sized urban areas or provincial zones where commuting to major physical campuses is difficult. The student, with no major difference between gender, often balances a full-time or part-time job to advance their career or obtaining professional retraining. Regarding the educational path, the respondents often possess a hybrid background, having started their undergraduate studies at a traditional public university, before transitioning to an online university to obtain a Master's degree or to complete an interrupted study cycle. In fact, this choice is driven by a pragmatic need for flexibility, allowing them to manage their time-life balance through asynchronous learning.

3.1 Preliminary results

The empirical evidence aligns closely with the sociological interpretation of AI as a "quiet revolution" in European and Italian

research standards.

[24] This type of sampling does not allow the research results to be generalized, but it is very useful as an initial exploratory phase of the phenomenon.

higher education. This transformation does not appear to be primarily driven by institutional strategies but rather by students' everyday academic practices, indicating that AI has become structurally embedded in study routines rather than remaining a peripheral or experimental resource.

Within this framework, the composition of the research sample provides important contextual insights: the sample is predominantly female (71.2%) and characterised by a heterogeneous age distribution, with a substantial presence of adult learners, particularly in the 20–24 (28.8%) and 40–59 (26.9%) age groups. More than two thirds of respondents are working students (73.1%), a condition that strongly influences both educational choices and study practices. Accordingly, most participants (67.3%) are enrolled in online (telematic) universities, while 32.7% attend traditional, non-telematic institutions.

This institutional distribution, combined with the high proportion of students whose region of residence does not coincide with the geographical location of their university (63.5%), underscores the role of telematic universities in responding to demands for territorial, temporal, and organisational flexibility. These structural characteristics help explain the normalisation of AI use within students' learning strategies, particularly among those balancing study, work, and mobility constraints.

In telematic universities–flexibility, asynchronous learning, and digital mediation constitute the organisational core–AI tends to be normalised as an efficiency-enhancing infrastructure embedded in everyday academic routines. By contrast, in traditional universities AI remains more normatively contested, reflecting stronger academic regulation, face-to-face pedagogical cultures, and heightened concerns regarding academic integrity. This divergence reinforces the claim that AI is not a neutral technological tool but is socially shaped by institutional norms, power relations, and evaluative regimes

(Foucault, 1980; Giddens, 1994).

Empirically, AI appears to be widely adopted across university study practices: 86.5% of student report having used AI tools at least occasionally, and approximately 69% indicate frequent use (several times a week or daily). Bivariate analysis reveals a significant association between the type of university attended and the intensity of AI use: students enrolled in telematic universities are disproportionately concentrated in frequent and routinised forms of AI engagement, whereas those attending non-telematic universities display more sporadic or absent use.

These data suggest that institutional learning environments play a decisive role in shaping both access to and normalisation of AI-based study practices.

Moreover, the higher reliance on AI among working students and those enrolled in telematic universities indicates that AI use is closely intertwined with socio-organisational constraints, including time scarcity, territorial distance, and employment responsibilities. From this perspective, patterns of AI adoption reflect uneven distributions of digital capital rather than purely individual preferences or attitudes toward technology (Bourdieu, 1986; van Dijk, 2005, 2020).

Similar differences also emerge with respect to the use of AI for writing academic assignments. Although most of the sample reports do not use AI for this purpose (53.8%), students enrolled in telematic universities show a greater propensity toward partial or integrative forms of use, whereas students attending traditional universities tend to exclude its use altogether. This pattern likely reflects a stronger internalisation of academic norms, as well as more direct faculty oversight, within non-telematic institutional contexts.

Overall, AI is primarily employed as a support tool–particularly for summarising texts, preparing for examinations, searching for sources, and translating materials–rather than as a

substitute for individual study. Indeed, 78.8% of students report that AI complements, rather than replaces, their cognitive effort. However, bivariate analysis indicates that students from telematic universities more frequently experience a tension between the desire to learn and the temptation to delegate academic tasks to AI, pointing to a structural conflict between efficiency-oriented practices and cognitive autonomy.

At the level of social representations, a clear discrepancy emerges among academic actors. While AI use is perceived as largely positive by students (86.5%), it is regarded as predominantly negative by faculty members (57.7%), particularly according to the perceptions of students enrolled in non-telematic universities.

Table 1: Differences in learning practices and institutional approaches

Variable	**Telematic Universities**	**Traditional Universities**
Openness to AI	High. Students are already accustomed to digital platforms and perceive AI as a natural extension of their learning ecosystem.	Variable. Often dependent on specific faculties or the individual lecturer's openness to technological innovation.
Institutional Support	More frequent availability of integrated tools and university-organised webinars focused on AI applications.	Generally, more cautious and conservative, with regulatory frameworks still in early stages of development.
Study Methods	Predominant use of AI for self-directed learning and autonomous management of digital learning materials.	Predominant use of AI for text processing and source retrieval in support of printed textbooks.

Table 2: Impact of AI use on employability and career opportunities

Dimension	***Employment Opportunities Related to AI Use***
Digital Competence	Online students tend to develop a "digital-first mindset" that is highly valued in remote work settings and technology-oriented occupations.
Skill Certification	Institutional support in telematic universities often results in formal certifications and officially recognised digital competencies, enhancing graduates' curricula vitae.
Adaptability and Learnability	The use of AI for self-directed learning reflects a high level of "learnability", considered a key soft skill for navigating rapidly changing labour markets.

The analysis shows that students at telematic universities tend to perceive AI not only as a study aid but also as a transversal skill (soft skill) essential for future employability. In contrast, students at traditional universities often view AI as a useful tool but external to the "classical" professional pathway, potentially resulting in less alignment with the technological demands of modern workplaces.

In general, these preliminary findings indicate that the type of university constitutes a key variable in shaping practices, perceptions, and normative dilemmas related to the use of AI. In this sense, AI is framed as a structurally integrated resource within telematic contexts, while remaining a more ambivalent and normatively contested tool in traditional university settings.

4. From flexibility to "inequalities"? The AI use as "digital capital"

The results indicate that AI use in university study is not a homogeneous phenomenon but is strongly influenced by structural and institutional factors, particularly the type of university attended. Several patterns emerge, including differences in both the frequency and purpose of AI use. While basic AI use shows no substantial gender disparity, male students report slightly higher perceived competence and a stronger orientation toward problem-solving or programming tasks. In contrast, female students more frequently use AI for text summarization and study organisation and often express greater concern about ethical implications and the risk of "*intellectual laziness*".

Generational differences also shape the degree of '*natural integration'* of AI tools. For Generation Z students (under 24), AI use is pervasive, functioning as an almost taken-for-granted assistant for transcribing, summarising, or clarifying complex concepts in real time. Adult students and workers (over 30) tend to use AI more pragmatically, primarily to optimize time constrained by work-life balance. Trust is generally higher when the tool facilitates bureaucratic or formatting tasks.

The widespread adoption of AI among students at telematic universities appears closely linked to the organisational configuration of these institutions, characterised by highly digitalised and asynchronous teaching models and a strong emphasis on student autonomy. Within this context, AI is commonly used as a routine support tool, mainly serving functions related to time management and simplification of academic content. Conversely, at non-telematic universities, AI use is more cautious and selective, reflecting closer symbolic and normative proximity to faculty and assessment models perceived as more rigorous. This is

particularly evident in the use of AI for academic writing, where students at traditional universities show greater resistance due to ethical concerns, fear of sanctions, and considerations of authenticity and legitimacy.

Consequently, students at telematic universities seem to accumulate a form of pragmatic digital capital oriented toward efficiency and employability, whereas students at traditional universities remain more aligned with classical academic norms and evaluative standards. This divergence mirrors broader differentiation processes within the Italian university system, where institutional models mediate access to technological resources and shape learning and career trajectories (Ragnedda e Muschert, 2023; Cortoni, 2025).

Finally, the tension reported between the desire to learn and the temptation to delegate tasks to AI–more pronounced among students at telematic universities–highlights an intrinsic challenge within increasingly digitalised learning environments. While AI serves as a resource for efficiency and accessibility, it simultaneously raises critical questions regarding the preservation of autonomy and critical thinking. This tension is further amplified by the gap between students' generally positive perceptions of AI and the more skeptical views attributed to faculty, framing AI use as a space of normative ambiguity within the contemporary academic field.

Conclusions

The findings can be interpreted through a sociological lens that conceives AI as a socially situated technology, whose meaning and function are shaped by institutional arrangements, everyday practices, and normative frameworks (also related to labour market).

AI use varies systematically according to the type of university attended, indicating that study practices are deeply embedded in distinct academic fields and linked to the development of both digital literacy and professional competencies.

Drawing on Bourdieu's theory of social fields and *habitus* (Bourdieu, 2011; 2021), the greater integration of AI among students enrolled in telematic universities reflects the specific rules, forms of capital and logics of legitimation characterising this subfield. In these contexts, AI functions as a form of techno-cognitive capital oriented towards efficiency, time management, digital literacy and continuity of study, particularly for working students who must balance academic responsibilities with labour market demands. The question is also whether online universities are filling the critical gap between use and conscious/critical use or simply promoting superficial operational use.

By contrast, in traditional universities–where faculty authority and in-person assessment retain strong symbolic capital– AI use is more tightly constrained by implicit normative expectations, especially in the production of academic assignments, shaping how students acquire skills deemed legitimate for both academic and professional recognition.

The tension reported by some students between the desire to learn and the temptation to delegate tasks to AI can be interpreted through Foucault's notion of *ispositive* (Foucault, 1975): AI reorganises regimes of knowledge production and introduces new forms of cognitive discipline, generating ambivalence between self-regulated learning, technological delegation, and the acquisition of labour-relevant digital competencies. From a Science and Technology Studies perspective, AI can also be understood as a non-human actant that reshapes learning networks by redistributing agency, digital skills, and opportunities for employability (Robson e Bottausci, 2018). However, this reconfiguration remains context-

dependent, being more readily legitimised in telematic universities than in traditional ones.

In conclusion, the results confirm that AI in higher education represents both an opportunity and a source of new inequalities: without coherent institutional strategies, structured training, accessible digital and IA literacy and shared ethical frameworks, AI risks reinforcing efficiency-oriented adaptation while weakening critical, reflexive, and digitally literate learning forms that are essential for fair labour market access.

This exploratory investigation exemplifies how unequal technological integration can exacerbate tensions between flexibility and quality, access to work, digital literacy and competences (DigComp 3.0), efficiency, and meaningful educational participation (Goastellec, 2011).

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