

AI in universities: revolution or risk?

L'IA dans les universités : révolution ou risque ?

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Abstract

This paper examines the transformative and contentious role of artificial intelligence (AI) in higher education, focusing on its pedagogical, administrative, and ethical implications. Through a qualitative case study of Mohammed V University in Rabat, the study highlights how AI tools are reshaping educational processes—enhancing efficiency, personalizing learning, and improving risk detection. However, the integration of AI also raises concerns over algorithmic bias, transparency, equity, and the erosion of human-centered educational values. The paper advocates for a balanced, ethically guided adoption of AI, urging universities to assume active roles as technology shapers rather than passive adopters. Findings emphasize the need for strong governance frameworks, AI literacy, and inclusive decision-making to ensure that AI enriches rather than undermines the mission of higher education.

Keywords: Artificial Intelligence; Higher Education; Educational Technology; Algorithmic Bias; Pedagogy; Data Governance.

Résumé

Cet article examine le rôle transformateur et controversé de l'intelligence artificielle (IA) dans l'enseignement supérieur, en se concentrant sur ses implications pédagogiques, administratives et éthiques. À travers une étude de cas qualitative de l'Université Mohammed V de Rabat, l'étude met en évidence la manière dont les outils d'IA transforment les processus éducatifs : ils améliorent l'efficacité, personnalisent l'apprentissage et améliorent la détection des risques. Cependant, l'intégration de l'IA soulève également des inquiétudes quant aux biais algorithmiques, à la transparence, à l'équité et à l'érosion des valeurs éducatives centrées sur l'humain. L'article plaide pour une adoption équilibrée et éthique de l'IA, exhortant les universités à jouer un rôle actif de faconnneurs de technologies plutôt que d'adopteurs passifs. Les résultats soulignent la nécessité de cadres de gouvernance solides, d'une maîtrise de l'IA et d'une prise de décision inclusive pour garantir que l'IA enrichisse la mission de l'enseignement supérieur plutôt que de la compromettre.

Mots-clés : Intelligence artificielle ; Enseignement supérieur ; Technologies éducatives ; Biais algorithmiques ; Pédagogie ; Gouvernance des données.

Introduction

In the last ten years, artificial intelligence (AI) has all but migrated from the margins to a central place in our culture, and higher education is leading the charge. For example, because of sophisticated tools like OpenAI's ChatGPT or early mortality predictive analytics algorithms, automatic grading and assessment mechanisms, and adaptive learning platforms, we are already acting differently to teach, learn, assess, manage and produce knowledge in universities. These provide greater efficiency, personalization, and scalability, and hint at changes to the entire edifice of academic life.

Colleges and universities are normalizing the use of AI-based systems in new teaching and research practices and in existing administrative structures. For example, instructors are designing and using AI to deliver personalized content and automatically assess learner performance (Holstein, Vaughan, Daumé, Dudik, & Wallach, 2019); and institutional leaders are employing data-driven algorithms to recruit students, predict dropouts and allocate resources. AI is used throughout research workflows, for instance, to generate literature reviews and detect plagiarism (Azizpour, et al., 2020); generative models like ChatGPT are able to generate entire essays or outlines for projects in just seconds (Tenakwah, et al., 2023). The fact that such tools are already proliferating is a paradigm shift within the systems in which we work and learn, and universities are reexamining their traditional epistemological and ethical foundations.

But the ascendance of AI in the field is likewise, not necessarily accepted with cheer. There are certainly significant concerns raised by universities scholars less hopeful for AI, who have warned, for example, of risks to academic integrity, issues with expectations around algorithmic bias, loss of human agency in teaching, and issues regarding widening digital divides (Selwyn, 2019) (Williamson, 2020). AI replicates systemic inequalities and operates as a form of opaque decision making and only assists in the commodification of our intellectual labor, suggesting the need for far more scrutiny. As the functions of university are automated, we must ask - what becomes of the critical, reflective, and human-centered purpose of higher education?

Research question:

To what extent is the use of artificial intelligence in universities a revolutionary advancement and to what extent is it a threat to core academic values, institutional autonomy, and learning equity?

The purpose of this paper is to respond to this task by providing a three-part response:

- To map the historical and current uses for AI in the higher education space as it pertains to teaching, administration and research;
- To discuss the ways in which AI systems might transform a university's function, at the level of optimizing university function and enhancing learning;
- To analyze the ethical, pedagogical, and institutional risks that AI presents, and how universities can engage with this technology in a responsible manner.

Instead of advocating the position that AI is either or both utopian or dystopian, this paper focuses on providing a balanced assessment through an evidence-based discussion of AI also grounded in recent research and theoretical literature, to address our understanding of the implications of this disruptive technology for the future of the university.

1 Literature Review

1.1 An educational revolution underway

The arrival of artificial intelligence as a technological advancement is not separate from the learning and teaching processes that characterize higher education. Particularly, what has upheaved the boundaries of language processing and automated thinking are generative models, however, the adoption of AI is not limited to generative models. In many ways we are still consuming AI in the form of large generative models but more importantly we experience learning environments where adaptive learning systems are transforming the educational environment by utilizing machine learning paradigms with real-time analytics to tailor education to an individual learner profile considering ratings as it continually responds to students' performance to modify formats, difficulty, and pace (Tenakwah, et al., 2023) (Dwivedi, Hughes, Ismagilova, Aarts , & Coombs, 2021). The idea of a continuous feedback loop that responds to 'at the time' performance related feedback has theorized in constructivist learning and is evident in many adaptive learning environments like Squirrel AI Knewton, and Smart Sparrow) (Holstein, Vaughan, Daumé, Dudik, & Wallach, 2019) (du Plooy, Casteleijn, & Franzsen, 2024).

These systems are striving for inclusiveness by considering light learning profiles of many students while looking to address educational inequalities (though some state they are embed technocratic logic within these disciplines) (Selwyn, 2019). Automated grading systems represent yet another pillar of the developing AI revolution in higher education. Instruments like ETS's e-rater or perhaps an open-source NLP tool all have the ability to score student writing with respect to grammatical features, overall coherence, relevance to content, and even in terms of the structure of their argument (Balfour, 2013) (Lockwood, 2024). While such

systems are often used to lessen the workload of assessing student writing on a large scale (as in massive open online courses (MOOCs)), getting to the point where educators acknowledge the use of these systems has caused concern with respect to elements of academic integrity that are relegated to context and expression. Utilizing such systems shows that the algorithm on the other end of the assessment may, in fact, ignore elements of expression and disciplinary styles or that students come from a socio-linguistic background that affirms monolithic responses to standard notions of academic communication (Link & Koltovskaia , 2023).

An even more innovative — and contentious — attribute of AI technology is its ability to create bespoke learning paths for each learner. AI systems will tell you they know you better than you know yourself via predictive analytics, recommender systems, or continuous monitoring of your progress. It has been provided evidence of the ways in which learning analytics can identify learners who are struggling early enough to provide early, tailored interventions. The downside to such systems is that they treat all learners as data profiles, therefore ignoring the socio-emotional and contextual aspects of education. The challenge of personalization and in quantifying student learning is part of wider conversations regarding the ethical concerns of AI through an education lens, and the educational philosophy of AI as it applies to learning in schools (Williamson & Eynon, 2020).

In addition to reimagining the ways in which academics think about space and time, AI technologies hold the potential to make every moment of academic life an indexed space that can be generated and conceptualized under academic discourse. Learning continues to shift from the traditional classroom and set teacher-student timetables, to occurring asynchronously, in digital settings, composed by intelligent systems. Coupling AI with the flipped classroom model means that teachers can off-load basic instruction, to AI agents, and spend in-person time on higher-order thinking skills (Williamson, B. & Eynon, R., 2020). However, while this is a new arrangement, it requires new forms of digital discipline where students monitor their own engagement and faculty utilize different pedagogical presence simultaneously through hybrid technologies. While this is simply a management change, it can fundamentally alter what we perceive as meaningful academic engagement.

The associated administrative functions of the university are also being transformed algorithmically, with more and more services becoming embedded in AI for student advising, enrollment management, course scheduling, and even faculty evaluation. For example, there are systems such as Civitas Learning that utilize predictive analytics in order to notify academic advisors or deans of students who have characteristics of being truthfully likely to “drop out”

and provide these advisors with a set of prescriptive actions to engage with those students (Link & Koltovskaia , 2023). While many of these systems are conceived as data-driven efficiency and better institutional evaluation and decision-making, they will necessarily frame the university in a surveillance mode that will affect the autonomy of students or professors or dissolve many rational orders of academic governance (Komljenovic, 2021). While the university was defined epistemologically by human deliberative judgment, this judgment is often invoked through opaque "black-box" systems, the engagements of which many of the developers may not even understand.

Lastly, the AI transformation in higher learning is not an unmarked innovation process, it manifests some scope of macro-sociological political agendas. AI use is often framed as a technocratic response to public political and economic issues, namely financial pressure on institutions, lagging budgets, and massification - where universities have adopted to remain competitive in producing elites - global rankings or finding ways to attract new consumers who were digital natives (Williamson, B. & Eynon, R., 2020). These macropolitics play a large part in the way AI has been instrumentally constituted by neoliberal thinkers, who occupied themselves with efficiency, scale, quantifiable, calculable outcomes vs. more abstract ideals of critical inquiry, the embrace of new co-production, delimited relations of public and consumer engagement and democratic participation. Thus, AI is not simply an artefact or tool, but it is also, like a human institution, another layer of ideological composition and re-composition, changing not so much the form of universities' conduct, but also what they are for.

In opposing the deterministic accounts that could arise from this kind of rapid change, it is important to know that the future of AI mediated education is not a prescribed option but a continuum of agentic choices that are inevitably affected by what educators, faculty, administrators and even students choose to do in relation to their own ways of engaging with AI to extend their means of using AI or to support computers in our humanistic learning environments. As Aoun, said, every university administrator educator must curate our own trajectories of radical change through AI that includes “cognitive flexibility” (Aoun, 2017). AI can both manage the depth of understanding of the reflective pedagogy, the scaffolding of complex problem solving and add access to learn for students that are usually underserved - but only if AI is considered within a viable framework of ethical considerations, pedagogical intentions and institutional self-disclosure and accountability.

1.2 Artificial Intelligence: A threat to the role of teachers?

The rapid advancement of artificial intelligence in higher education has stirred anxieties about the mechanization of labor already long since transferred to the pedagogical space. In particular, the prospect of substitution — that artificial intelligence might displace the educator — has sparked intense conversations both in academic and institutional contexts. Some, such as Selwyn, anticipate the "uberization" of teaching, with intelligent agents providing instructional materials at the moment of need and alienating the educators' bodily and emotional presence (Selwyn, 2019). Such scenarios are not science fiction; large scale platforms are already using artificial intelligence-powered chatbots, virtual tutors, and automated feedback systems capable of assuming roles once limited to the professoriate (Link & Koltovskaia , 2023). This can be particularly disruptive in large introductory courses and MOOCs, where pressure for greater scale invites more automation over human interaction (Kerr & Popenici, 2017).

Nevertheless, other scholars have pushed back against the either/or framing of artificial intelligence as a teacher replacement. The idea of complementarity has been suggested, whereby artificial intelligence is considered a complement to — rather than a replacement of — the educator, adding value rather than detracting. Holmes et al. (2022) wrote that artificial intelligence systems are suited for routine, repetitive tasks (grading, scheduling, content retrieval), but lack capacity in tasks requiring empathy, intuition, or moral judgement (Holmes, Bialik, & Fadel, 2019). This means that educators can be liberated from the overhead of logistics, and thus able to re-orient their efforts around more important high-impact interactions like mentorship, discussion, and scaffolding. The artificial intelligence and educator thus become a cognitive prosthesis rather than a pedagogue usurper — they can work together producing scaffolding, supporting the human teacher's capacity, not removing it. This ongoing debate around substitution vs. complementarity converges upon a discussion of how ongoing redefinition of the teaching profession and teacher identity has an effect on AI integration into pedagogy. The image of the "sage on the stage" - a subject expert with knowledge being transmitted - is almost universally giving way to that of "learning designer," a professional designer of complex interactions among learners, content, and intelligent systems, all of which are entangled into the learning experience (Laurillard, 2012). And increasingly for educators inhabiting AI-mediated learning spaces, they will develop competencies and practices with these tools and digital pedagogies that could include those involving algorithms which recommend course development, evaluate system outputs, and even evaluate tests that are designed to preclude AI-generated responses. This requires more than just technical fluency, or

practice in using tools, but practice in critical digital pedagogy, where the ability to reveal the inherent values of educational technologies and their use is vital (Azizpour, et al., 2020).

With AI literacy emerging as a professional responsibility for educators, this articulates an epistemic shift in terms of teacher identity. The role of content expert is no longer sufficient; educators now have to be aware of how, but more importantly to understand the nature of, AI systems, the limitations of using them, and ethically and equitably using AI within pedagogies. Zhang and Aslan state that there will be an increase in demand for faculty development that includes AI training, but only at the theoretical and not just operational level. The access and availability to training is not universally the same (Zhang & Aslan, 2021). Educators also identify struggle dealing with the pace of change already happening. The mismatch between the sophistication of AI tools and the digital readiness of educators is a major challenge to integration (Moroianu, Iacob, & Constantin, 2023). Additionally, the affective and relational dimensions of teaching lie relatively uncharted territory with respect to algorithmic simulation. AI can create text or give feedback, but it does not engage in nuanced ways with students who might be struggling with distress, or trying to spark an emerging and sometimes baggy intellectual curiosity in response to the messy dynamic that is a classroom. In echoing Biesta (2010), the teaching interaction is not simply a transfer of information, but a summoning of that subject into existence, of which are predicated on not just dialogic presence, and ethical care, but pedagogical tact as well. Thus, reconfiguring teaching as a set of machine functions can dehumanize the learner and diminish the transformative capacity of education.

Although teaching roles and AI are definitely intertwined, which offers room not just for critique, but opportunities to creatively experiment with hybrid models. These models emerge, for example, in a human-AI design. With the capacity for informed agency-of-choice between a human and AI collective doing the work of but providing a more multi-layered scaffolding positionality to students. As Aoun identified research that will flag a learner in distress in a non-linear way, in real time, enabling a timely response. Intelligent agents can and do generate resources - if not personalized resources for students to study, then personalization can allow instructors to focus on important pedagogical factors relevant to rich inquiry-based learning experiences, rather than again merely measured learning experiences (Aoun, 2017). The key distinction here is that AI does not need to assume the role of competitor and rival, it is in actuality a partner — for better or worse. The caveat is defining and understanding the side of the relationship we as humans will allow ourselves to be dictated by in terms of, not the AI program itself, but the behaviour limitations set from an ethical stance.

Nonetheless, this idealistic view hinges on a type of control institutionally, and epistemologically, that is quite simply not there often cited as the saturation experienced by education as opposed to dissemination reached through methods of transmitting information. Many digital tools now available and even installed, outside of challenges posed on what quantifies 'effective' practice by the creation of proprietary technology and internal working routing of data processes (Williamson, B. & Eynon, R., 2020), leaves the educator educator functioning as a data labourer with the legitimation authority of the epistemologically queer playing many divergent roles; dashboard interpreter, identification of identifying learning metrics and complying/compromising with predictive widget-type teaching since the educators career will not tolerate professional autonomy. Therefore, is it the researcher or the researcher-function subordinate as listener to questioning/answering of roles of roles determining teaching practice? More question arise establishing beyond what constitutes weakness - who gets to come to the conclusions and agency-of-choice of motivational construct of effective teaching evaluations, that are not by the pedagogical processies', but increasingly through some computerized code basis. Unless and until institutions remain intentional to resurface educational values, technological determinism is increasingly seeking to and will incorporate our natural habit of adjusting to learning environments in line with other technology-enhanced schools of thought.

Most importantly, while ranging from debates to recommendations seems trivial compared to the perceived threat AI poses in communities of teaching, questioning the most basic ontology of what it means to be a teacher in light of developments in AI and teaching, as the authors remind us, that it is easier to conclude that a teacher is merely a facilitator of content and thus an educator is not fundamentally changed - or doing the real work perhaps if it remains conceptualized as simply that a teacher's work displayed by the real players involved, or a coparticipant presence with others who are co-constructing knowledge, identity and power. If we continue considering the co-constructing identity and power, I would challenge or question going forward the passive acceptance of what might entail embracing AI with critical resistance and intentional design, as do not reject AI altogether but endeavour to embrace it with place and space for humanistic perspectives in education - prioritize dialogue, relationships, care, ethics and democratic practices over efficiency and process, as Knox claims, but the future of what teaching will be in an increasingly AI-determined field will certainly not be determined, by what AI machines can do, but what we as educators determine we let AI, or "we" decisions (Knox, 2020).

1.3 Ethical issues and structural challenges

Even as integration of artificial intelligence into university systems is often praised for its pedagogical promise, there is a statistically more complex latticework of ethical and structural issues that have not sufficiently been addressed. Among those issues is algorithmic bias, which refers to machine learning systems replicating or even amplifying past forms of inequality from the historical data they were trained on. It is foreseeable for algorithmic bias to be present in using predictive analytics in university admissions, modeling student success, or in providing automated feedback to enhance course delivery and learning. If algorithms use prior datasets representing structural inequities, they can also perpetuate inequalities in educational capabilities (Moroianu, Iacob, & Constantin, 2023). In this sense, AI does not act as a morally neutral decision maker, but rather as a 'mirror with memory', because they reflect and enforce the past delusions of neutrality.

These issues are further complicated by the secrecy of proprietary systems, a majority crafted by private businesses that operate an independent pursuit of profit away from typical academic governance. Academics often use commercial platforms, from Turnitin¹ to Coursera's algorithmic recommendations, without fully understanding how the backstage machinery operates. Universities' engagement and reliance on private platforms raises serious concerns about the autonomy, transparency, and accountability (Williamson, B. & Eynon, R., 2020). As a result, universities, which have long prioritized the creation, ownership, and use of knowledge for the public good, are now intermediated by vendors, who specifically have obligations to their shareholders and not their students. The outsourcing of essential academic functions to "black box" systems transfers authority for those functions away from educators to an algorithm the criteria of which are proprietary and effectively unchallenging.

The dangers of the platformization of education are not simply hypothetical. As Komljenovic points out, digital educational markets are increasingly predicated on the notion of data extractivism: educational platforms are actively collecting huge amounts of data on their students' behaviour, engagement, cognition and learning and profiting or optimizing their systems with respect to that data (Komljenovic, 2021). When we treat our students simply as data points to commodify their behaviour into learning analytics, we erase the relational and reflexive dimensions to the educational process. We also limit pedagogical design itself by privileging a platform logic oriented around modularity, measurability and engagement analytics over the repositioned fundamental elements of intellectual development like criticality, uncertainty and failure.

In addition to these structuring problems, the issues of access to technology and inequity are significant. Access to technology is not only starkly different from one university to another, but they can be quite different within even the best funded universities. While wealthy institutions may have the deep pockets and the infrastructure to adopt the sharpest AI, underfunded institutions, throughout the Global South for example, are often engaging with digital infrastructure and digital educational spaces with much less; even basic digital environments and technology last on the landscape of educational priority. This is not simply reproducing existing inequities in education, but creating a two-tiered academic environment, where some learners benefit from an individualized, platform production of education with AI integration, while others experience an exclusion from technology (Robinson et al., 2021). The purported "innovative" components of AI ignore the notion of access and reinforces a path towards inequality and academic stratification. Though we have all embraced advanced technology, the gulf of divides still exists. Students without access to reliable internet, a device that is up to date, or a quiet space in which to study, will also be disadvantaged in AI-facilitated learning environments. As perniciously, natural language processing (NLP) models are less responsive to non-native speakers, local dialects, or culturally specific idioms. This is discriminatory against linguistic diversity (Balfour, 2013). It requires learners to conform to a hidden curriculum of conformity in which learners must change how they express themselves to meet the machine's preferences of language, thereby constraining their own authentic voice and identity.

Further, data privacy and data consent (risks) are at the forefront of these issues. Most AI-enhanced platforms are, after all, unequally collecting mountains of personal and behavioral data (often with little informed consent and without any transparency related to data use). In a number of cases, learning and teaching professionals are conducting their work without being made aware of the surveillance embedded in their technologies (Knox, 2020). The use of AI in HE could normalize surveillance and monitoring across campus life as 'personalization', but less often education. Data (non)autonomy now does not only consider 'legal' implications for participants but also 'educational' implications — has the mechanism with which we learn changed?

Legal rights related to data protection — like that offered by the EU's General Data Protection Regulation (GDPR) — might offer some protections, but enforcing protections consistently across the educational sector is impossible for the speed of innovations and adaptations, and does little to protect learning or learners. Many institutions do not have the internal capacity to

engage in any auditing or vetting of the AI tools used (Slade & Prinsloo, 2013). As a result, there will be compliance without any accountability for institutions — egregious compliance and ethical gaps that place students at risk.

In countries without adequate regulatory legal frameworks (for instances, data protection), software tools that curate educational data (for third parties) will likely present globally with unilateral terms and conditions forced upon students or institutions. The imbalance of agency in accountability implies risk for students and HE professionals and an poor institutional response to breaches, use or misuse or discrimination (limited pathways to redress).

The ethical use of AI in the university does demand more than checking off compliance or technical solutions, and even the implications of ethics, our values regarding education will need to be challenged when we think about education, autonomy and automation. As Selwyn says, are we really asking and seeking to know if AI works, or rather, who does it work for, how does it work, and at what expense? The institutions will need to develop governance frameworks accordingly, which will consider, engage stakeholders, foster algorithmic transparency, protect student agency, and combat technocratic solutionism (Selwyn, 2019). Only then will AI contribute to education that is not masked with bureaucratic alternatives which tries toward control and inequality as a 'technological solution' but towards opportunities of criticality, emancipated and inclusive education.

2 Methodology

Utilizing a case study approach, this research follows qualitative case study methodology that is ideal for a complex, context-based study like the introduction of AI in higher education. Case study research allows for a deeper, situated understanding of both opportunities and challenges AI in a real university context and how AI integrates into the political landscape of university culture, teaching and pedagogical approaches, and ethical considerations. Case study research allows us to examine both the stated and unstated connections between actors positioned to make decisions about AI, such as administrators, instructors, and students, rather than simply collecting survey data on their perceptions of AI adoption and/or level of usage of AI tools. This research is based on several semi-structured interviews, internal documents reflecting university policies and practices, and direct observation of AI enhanced digital platforms.

This case study approach relied on an analysis of multiple sources of data to develop a broad, nuanced, and empirically rich representation of the context. A university was selected purposefully, with both early adoption of generative AI technologies and a public facing interest in digital transformation. Although a university as a case study does not have generalizability

in a statistical sense, this has some analytical generalizability and assists to enter into much larger debates about the role of AI in reimagining academic institutions. Methodological rigor was employed using transparent coding processes, university ethics approval, and member checking with key informants to establish trustworthiness of the study and findings.

3 Results

The qualitative case study regarding the use of artificial intelligence (AI) technologies by Mohammed V University (UM5) in Rabat, offers a nuanced representation of how AI repertoires are employed to impact teaching, assessment, and student support positively, while entrenching new challenges.

During the COVID-19 pandemic, UM5 implemented place-based hybrid tools such as Google Classroom. Faculty feedback indicated that the platform was used for preference forms, quizzes and reviewed documents from submissions, which indicated the degree of reduction in the administrative burden and standardisation of assessment (boutakrint, 2023). Although the systems increased efficiencies concerning the assessment, issues were once more raised over the didactic limitations of auto-generated feedback and the absence of the personalised lectures. An ArXiv study led by Elbouknify et al. examined Morocco's educational data architecture -- including UM5's students' performance records -- to develop predictive models (e.g. LightGBM, Random Forest) (Elbouknify, et al., 2025). The system achieved ~88% accuracy, precision, and recall to identify at-risk students prior to critical dropout stages. UM5 acted on these results to take preventative measures with an academic advisor, exemplifying a hybrid model in which AI revealed problems and real humans supplemented AI results with individualized assistance.

Professors from UM5's School of Engineering (École Mohammadia d'ingénieurs - EMI) took part in pilot studies with adaptive learning modules that included real-time sentiment and interaction analytics. While the sample sizes were small, UM5's faculty reported performance increases for students who were struggling with mathematics or engineering topics (Elbouknify, et al., 2025). These novel educational environments enabled UM5 to have a living experience enabling them to rapidly modify assistance; however, the faculty recognized that tuning the algorithms was still a heavy lift.

Interviews with UM5 instructors found that AI tools - particularly in grading and student chat queries - were able to reduce instructor administrative workload by at least 30 - 40%. One professor said, "I was able to get the automated resource to deal with basic queries and quizzes and I was able to spend my time assisting students who were struggling with the fundamentals"

(Elbouknify, et al., 2025). While the instructors had time away from the other responsibilities, they had concerns over whether the scores themselves were transparent and whether assessment algorithmically reached students to encourage them to sometimes aim for a higher score.

While effectiveness rates are good, faculty and students often spoke to challenges with non-transparent decision-making. In technical respects UM5's predictive models work well, and most data the institutions desire are available (see UM, 2023c and Appendix); a large percentage of stakeholders still do not have clear awareness of the data and logic underpinning decision outcomes. Students' feelings of discomfort being labeled "at-risk" had no clear mechanisms to articulately specify the rationale creating those outcomes - and staked ethical issues about bias, and fairness. Access to reliable Wi-Fi and contemporary devices in the homes of faculty and student, to keep a steady track of engagement effectiveness has hampered tracking the engagement effectiveness. Recent reports indicate rural and low-income students had less engagement on online learning platforms - and most of the first cohorts assessed had very little AI derived support based on unreliable data signals. There is no UM5 policy describing data ownership, storage retention, or access. The concerns about data ownership and privacy affecting UM5, access to data by a third-party vendor and potential misuses are increasing.

In response to the feedback on the previous points, UM5 administrative staff have established a number of steps going forward to reinforce AI design and use:

- Mandatory AI literacy workshops for staff and advisors.
- development of a committee around ethics and oversight of AI.
- and a formal process to develop good data governance policy, both in terms of protecting student data, and supporting innovative processes around research.

Table 1. Summary table

Theme	Key Observations
Efficiency Gains	30–40% reduction in administrative workload
Predictive Accuracy	~88% performance in identifying at-risk students
Transparency & Trust	Opaque systems reduce stakeholder confidence
Access Inequity	Digital divide limits equitable AI engagement
Data Governance	Institutional structures are emerging but incomplete

Elaborate by us

4 Discussion

The Mohammed V University case exemplifies a small-scale representation of the larger oscillation between the benefits and challenges of the incorporation of artificial intelligence (AI) in higher education. While the results from the institution identify that the level of efficiency and predictive capabilities of the institution have undergone considerable improvements, with the identification of at-risk students and so on, these improvements must also be weighed against structural, pedagogical and ethical implications. As will be demonstrated in this discussion, the experience of the institution demonstrates global debates about whether AI really is delivering a revolutionary educational innovation, or whether it poses a latent threat to university education altogether.

First, it is clear from the case study that there is a great deal of potential for AI to be used to enhance pedagogy. The institution was viewed to be using automatized assessment tools, intelligent tutoring systems and early alert systems. This paralleled global trend reported by Holmes et al. (2019), du Plooy et al. (2024), and Kerr & Popenici (2017), as institutions draw tangible evidences that demonstrate measured gains in scalability, personalized assistance and efficiencies. The findings by Elbouknify et al. (2025), confirmed that machine learning can predict disengaged students rather accurately ultimately supporting Holmes et al.'s (2019) argument that AI, can encourage timely pedagogical action. Moreover, Aoun (2017) described this phenomenon as part of a global shift towards "robot-proof" education where human cognitive flexibility will complement technology's reliability in delivering individualized, interactive experiences. The role AI can play in supporting human-centered missions of universities can be productive, with the caveat that it is properly managed.

However, this optimistic framing does not come without considerations. The automation of assessment, for example, is also convenient but also raises significant concerns around authenticity and dependability. According to Balfour (2013) and Lockwood (2024) automated scoring systems, while more efficient than manual scoring, do not typically capture analytical depth related to rhetorical sophistication, originality in context, or intercultural (expressivity) compositions. Mohammed V University's partial reliance upon such systems embodies this challenge, as while university instructors relay the time saved working with automated assessment mechanisms, both students and faculty expressed discomfort with the directness and apparent rigidity afforded by, and inherent to algorithmic feedback. Link & Koltovskaia (2023) further this criticism when they show automated writing evaluation inadvertently elements of

non-standardality caused access issues for writing from diverse backgrounds expektorated in student writing.

Moreover, the epistemological redefinition of teaching and learning in the age of machine intelligence presents possibility and loss. Laurillard (2012) and Knox (2020) note that not only are universities moving from knowledge cable to designers of learning spaces—a contemporary development that necessitates providing another set of digital and data literacies—but these learning designers may actually not require the same set of privileges that facilitated knowledge dissemination. In other words, with their position as knowledge distributors diminished in importance, the significantly trusted position of assessing learning is diminished and learning designers like Williamson & Eynon (2020) develop the professorial identity of learning architects, which conveys power through their legitimacy that weighs heavily on poorly trained staff. At Mohammed V University, this dilemma presents clearly: mediated learning experiences using AI tools reduce elements of repetition and exposure of elbow grease but require elements of knowledge generation for which the majority of potential instructors are historically prepared. Our findings reach similar conclusions to Zhang & Aslan (2021), who stress the need for an immediate and coordinated AI literacy initiative for university staff to develop or enhance their existing important knowledge and practices.

An equally concerning challenge is intra structural dependence on corporate labour. As Komljenovic (2021) and Williamson (2020) cautioned, universities are situated firmly within a digital ecosystem that has been captured by private suppliers, whose algorithms function as "black boxes". In the Moroccan context, Boutakrint (2023) describes how prolifically and rapidly the public sector education system has been infiltrated by ChatGPT and commercially developed LMSs (Learning Management Systems) used to mediate learning case-study courses—often with minimal regulatory over-sight. The apparent absence of any transparent data governance at Mohammed V University, outlined through the results, illustrates a larger vulnerability: educational data are collected, stored, and processed in ways that frequently avoid legal accountability. Slade & Prinsloo (2013) describe this tension well as an ethics of surveillance, consent, and algorithmic accountability.

In addition to algorithmic bias and injustice, the issues of data injustice invariably coalesce. Holmes et al. (2019) and Holstein et al. (2019) suggest that when incompleteness and representativeness are not accounted for, machine learning models can reproduce, and intensify, educational inequities. Although the predictive models used at Mohammed V University were statistically controlled for inferential purposes, this argument applies here as well. Students

located in lower connectivity zones or from financially impoverished backgrounds, for example, may be incorrectly identified as disengaged, simply due to none or only some use of the platform—an issue that Tenakwah et al. (2023) describe as a "competency-recognition mismatch". Thus, the same technology created to personalize learning, on a broader level, or 'disadvantage' someone contextualized, if the software's confidentiality variables are not coded ethically.

Furthermore, there is a tension that is wrongly assumed to be either/or between personalization and standardization. Du Plooy et al. (2024) describe the duality of distilled learning pathways into a quantifiable quantity, while adaptive learning systems engage users in different ways. The student experience described at Mohammed V University was further compounded by both; the speed and accuracy of feedback from AI was recounted favourably, but students also described feeling trapped in "algorithmic learning paths" that inhibited autonomy and expression. This awareness of appealing to education through predicability resonates with a discussion from Dwivedi et al. (2021) who remind readers that an over-dependence on AI can drift toward techno-determinism, where predictive logic, designed to mediate important educational decisions, or ethical dexterity, is used to appropriate the agency of educators, actioning either/hard decisions, based only on the prediction.

At this point specific to the results, lack of ethical discernment and commitment to democratic action is prevalent in the use of AI. As Selwyn (2019) posits, the question isn't whether AI is capable of doing its existent tasks, but that of the ought; under what values. The absence of consultation with stakeholders, ethical reviewer processes and the clear absence of student engagement in any decision-making specific to AI at Mohammed V University leapfrogged the waves of global output and a chronologically analogous structure of top-down digital commodification. To that end, the university risked finding itself in what Moroianu et al. encountered in their examination of a "technological determinism trap", a continued pursuit of innovative endeavours, without a reflection of impact on society in the long term.

Conclusion

The addition of Artificial Intelligence to higher education represents a major change—but a change with many layers of ambiguity. This paper has investigated, through the case of Mohammed V University and through the wider field of education research, the two-sided opportunity of AI—to advance the curricular productivity of educators, to personalize teaching and learning pathways, and to support educators in identifying disengagement in students. This

paper, also, makes a contribution through examining as an opportunity that AI, if used responsibly, may support the mission of universities in equity and innovation.

However, this opportunity is tempered by all the drawbacks that we have discussed. First, we need to realize that the threat of algorithmic bias could further the inequity of social and educational experiences instead of eliminating them. Second, dealing with inscrutable and commercial platforms create legitimized concerns of data ownership, privacy, and independence of institutions. Third, the application of AI may fundamentally reduce epistemic authority where increasingly complex pedagogical decisions have become algorithmic and logical rather than contextual and negotiated. And last, the digital divide, in terms of infrastructural supports and literacy, will deeply marginalize and exclude historically precarity populations.

The future integration of AI to universities cannot be dominated by techno-solutionism because of these structural and ethical limitations. The authors argue for a hybrid approach to AI, where AI can complement human agency if sufficiently governed, reflexively, so that universities prioritize dialogic engagement and digital literacy, and also foster a transparent and ethical framework for AI.

From here, universities must not be a passive recipient of AI rather a shaper of design and implementation. This includes investing in the development of technical infrastructures, investing in inter-disciplinary collaboration, investing in open-source models, investing in AI education and ethics, and investing in critical thinking! While the technical challenge is an important one, it is ultimately a normative problem—institutions need to ask "how will we ensure that AI serves the moral purposes of equity, academic freedom, and human thriving?"

This work opens avenues for future research. What inclusive models of governance could ensure AI is adopted responsibly in post-secondary education? How can educators reclaim agency in algorithmic mediated conditions? How can post-secondary education build a culture of AI in line with their democratic and educational missions?

The answers to these questions will shape how AI is used in post-secondary education—not as an inevitability, but as a commonality.

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