Written evidence by Dr Madeleine Pickles (AIE0150)

Education Committee

The use of Artificial Intelligence and EdTech in Education inquiry

Executive Summary

This submission draws on three years of practitioner-led research with postgraduate students, synthesised from multiple data collection methods to provide robust evidence base on the use of artificial intelligence (AI) and EdTech in education. It demonstrates that AI is already deeply embedded in student learning, with near-universal adoption in higher education, creating both significant opportunities and urgent risks that require coordinated policy and institutional response.

The evidence highlights a central paradox: AI enhances learning and productivity when intentionally designed and supported, yet simultaneously introduces new risks to academic integrity, learning quality, safeguarding, and trust. On the positive side, AI-supported learning environments improve engagement, confidence, and higher-order thinking. Students report using AI as a tool to clarify complex concepts, deepen understanding, and challenge their thinking (e.g., "as a sparring partner… to challenge my thinking"), demonstrating that, when guided, AI can support active and reflective learning rather than passive dependency.

However, risks are substantial and already observable at scale. These include academic misconduct, unreliable outputs, and the potential erosion of critical thinking through overreliance. Social harms are also emerging, including increased isolation and the use of AI for companionship among a minority of students, raising safeguarding concerns. Ethical challenges, including bias, lack of transparency, and data privacy, further complicate the landscape.

The impact on teaching reflects this paradox. While AI can reduce workload in specific tasks such as lesson planning, it also generates new forms of labour, including verification of outputs, redesign of assessment, and increased safeguarding responsibilities.

The evidence strongly supports a shift away from restrictive or reactive approaches toward system-level transformation. Effective mitigation requires clear guidance on AI use, redesign of assessment toward authentic and process-based evaluation, investment in AI literacy for staff and students, cautious use of detection tools, and strengthened governance frameworks addressing fairness, transparency, and data protection.

Overall, AI should not be viewed solely as a risk to education, but as a transformative tool that, if implemented responsibly, can enhance learning outcomes. Realising this potential requires coordinated national strategy, sustained investment in professional development, and the meaningful inclusion of student experience in policy design.

Introduction

As an Associate Professor in Higher Education at Liverpool John Moores University, specialising in innovative teaching practice, I bring both academic expertise and applied experience in the integration of artificial intelligence (AI) into education. The evidence presented in this section draws on data collected over the past three years from postgraduate students, using three complementary data collection processes that are synthesised here to provide a coherent account of student experience and impact.

My work has been internationally recognised through awards for innovative teaching from the Academy of Management (AoM, 2026) and the University Forum for Human Resource Development (UFHRD, 2025), specifically acknowledging the integration and adoption of AI within my modules and its impact on student learning. Beyond academia, I serve as a Non-Executive Board Member for the International Education Management Agency (IEMA), contributing to strategic initiatives such as the Collaborative Intelligence and Initiative Frameworks (CIFF), which focus on the responsible integration of AI within global learning ecosystems.

In addition, as a parent of two teenagers (aged 14 and 16), I bring a complementary perspective on how AI is shaping learning behaviours across both formal and informal contexts, enabling a research-informed yet practice-grounded interpretation of the findings.

Challenges and Opportunities

There are several challenges and opportunities regarding the development and adoption of EdTech and AI across the education system. As contextual practitioner evidence, my teaching practice in higher education includes AI-integrated learning design, multi-platform AI-powered simulation, illustrating that (i) AI can enhance learning when intentionally scaffolded, but also (ii) risks must be actively managed through assessment design, guidance and literacy-building.

Opportunities:

To illustrate the pace of change, UK undergraduate surveys show rapid growth in the use of generative AI for assessed work from 53% in 2024 (Freeman, 2024) increasing to 94% in 2026 (HEPI, 2026). My experience in teaching Masters-level Research Methods provides direct evidence relevant to this inquiry's focus on how complex issues are understood, debated, and ultimately inform the decision-making processes. In this context, AI should be seen not as a risk to informed decision-making, but as a significant opportunity, provided it is implemented with conscious and considered guidance.

Within my teaching, I actively encourage students to use AI in a psychologically safe, structured environment to explore complex theoretical concepts such as ontology and epistemology. These are abstract and often difficult areas, yet foundational to how individuals interpret evidence, construct arguments, and engage in meaningful debate.

Students are guided to:

- Experiment with different prompts
- Share and compare AI-generated responses
- Critically evaluate outputs collectively

This creates a learning environment where ideas are not passively accepted but actively interrogated. Through this process, students develop the ability to navigate complexity, challenge assumptions, and refine their thinking. Research conducted in 2025 found that the majority of students in my Master's Research Methods classes use AI with their responses to the qualitative questionnaire suggesting active engagement rather than dependency (LJMU, 2025). When asking students how they used AI, responses demonstrated a responsible approach, aimed at supporting learning, rather than replacing the learning process:

“To help me understand particular definitions. I would literally ask it to describe terms to me like I am a 5 year old.”

“Reword, rewrite to simplify the terms for my understanding… used as a brainstorm tool to explore different ideas for my research topic.”

“I used AI to help define concepts that were more difficult, but followed this by further research… to ensure the information was accurate.”

Students also used AI as a tool to challenge and extend their thinking:

“As a sparring partner… to challenge my thinking.”

“Adds further thinking to my original points.”

“It gave further depth to concepts… and even gave examples.”

Crucially, students developed an awareness of the need for verification and scrutiny:

“It’s hard to know without double checking the AI.”

This evidence suggests that:

- AI can enhance comprehension of complex material
- AI can support more informed and reflective debate
- AI, when guided, encourages critical evaluation rather than passive acceptance

Challenges:

This section highlights key challenges: academic misconduct (contract cheating and ghostwriting), plagiarism and attribution ambiguity, AI misuse (overreliance, hallucinations and misinformation), erosion of critical thinking/problem-solving, social harms (isolation and antisocial behaviour), and ethics (bias, fairness and transparency).

Key concerns are that student adoption of generative AI for assessed work has become near-universal while institutional are often not sufficiently transparent, increasing integrity and equity risks (HEPI, 2026). Traditional detection responses are unreliable, creating both under-detection and false-accusation risks (Hadra et al., 2026) whilst hallucinations are commonplace with Large Language Models (LLMs) frequently fabricating references and can be confidently wrong (Chelli et al., 2024). There is also growing evidence that heavy reliance can reduce critical thinking through cognitive offloading/automation bias, although effects can be moderated by AI literacy and instructional design. (Zhai et al., 2024).

Policy and pedagogical mitigations that consistently emerge across the evidence include: clear permitted-use rules with disclosure expectations; assessment redesign towards process, authenticity and oral defence; investment in AI/digital literacy and staff Continuous Professional Development (CPD); constrained use of AI-detection tools with due process; rigorous procurement and impact assessment for algorithmic systems; and strengthened safeguarding and data protection guardrails for children and learners (QAA, 2022).

Contract cheating is where a third party completes work a student submits as their own;
ghostwriting is a long-standing form of academic misconduct in which authorship is misrepresented

(QAA, 2022). In practice, generative AI can function as a new "third party" that scales ghostwriting-like behaviours directly to the learner, blurring established categories while creating the same core harm: invalid assessment of learning (QAA, 2022). Pedagogically, the evidence consistently supports shifting from "product-only" grading to *process-rich assessments*: staged drafts, reflective commentaries, in-class components, oral vivas, and tasks requiring local/contextual or experiential inputs that are difficult to fabricate convincingly (QAA, 2022). Institutions should also teach students *how contract cheating markets operate* (including blackmail/extortion risks) and embed help-seeking pathways and academic skills support to reduce vulnerability (QAA, 2022).

A second, distinct risk is "synthetic scholarship": fabricated citations, invented quotations, or plausible-but-false claims inserted into academic work (Chelli, 2024). Controlled evaluations show that when LLMs are asked to support academic synthesis, reference accuracy can be extremely poor. In one comparative analysis of systematic-review style prompts, hallucination rates for references were reported at 39.6% (GPT-3.5), 28.6% (GPT-4) and 91.4% (Bard), with very low precision and recall against gold-standard references (Chelli, 2024).

A systematic review of overreliance on AI dialogue systems (PRISMA-based; 14 studies) defines overreliance as accepting AI recommendations without question and reports links to degraded critical cognitive capabilities, including decision-making, critical thinking and analytical reasoning, particularly when verification is weak and outputs are treated as authoritative (Zhai, 2024).

"Erosion" refers to reduced opportunity or motivation to practise high-effort cognition (analysis, evaluation, synthesis), resulting from cognitive offloading to AI systems (Lee et al., 2025) I believe that critical thinking, problem solving, creativity and oracy as essential skills potentially affected by AI. Evidence is emerging but increasingly coherent with a large study of university students (n=580) found that greater AI dependence was associated with lower critical thinking, with cognitive fatigue partially mediating this relationship; information literacy buffered some negative effects, indicating that skill-building can mitigate risks (Tian and Zhang, 2025). A systematic review of overreliance similarly links dependency to diminished creativity and increased reliance for answers rather than active learning engagement (Lee et al., 2025).

Social harms include increased isolation, reduced peer interaction, unhealthy emotional attachment to AI systems, and potential normalisation of antisocial or abusive interaction styles when learners primarily practise social exchange with compliant AI rather than humans (Ofcom, 25).

UK survey evidence indicates non-trivial social use: in 2026, around 15% of students reported using AI for companionship/advice/to address loneliness, and substantial minorities reported feeling either lonelier or less lonely with AI use, suggesting heterogeneous impacts (HEPI, 2026). Cross-sectional evidence from adolescents in Denmark (n=1,599) found 14.6% engaged in friend-like conversations with chatbots; importantly, the subgroup using chatbots for social-supportive conversations reported significantly higher loneliness (effect size $d \approx 0.53$) and lower perceived social support ($d \approx -0.46$) than non-users, implying a risk of "AI as coping mechanism" among socially disconnected learners (Herbener and Damholdt, 2025). UK safety regulators have also flagged concerns about unhealthy emotional attachments and vulnerability to harmful information as engagement with AI chatbots increases, particularly for children (Ofcom, 2026).

In education settings, social harm risk rises when AI tools are positioned as always-on "personal tutors" without complementary peer discussion, or when students substitute AI companionship for human contact during remote or commuter study (HEPI, 2026). Antisocial behaviour risks can emerge where AI systems respond passively/positively to abusive language, potentially normalising poor interaction norms; scoping work on AI companions identifies harassment/abuse and

"relationship deskilling" as plausible harm pathways, though experimental evidence remains limited (Autonomy Institute, 2025).

Ethical risks include biased model behaviour that disadvantages particular groups, opaque decision-making that undermines accountability, and data practices that conflict with children's rights and privacy (ICO, 2020). These risks span both classroom tools (tutors, chatbots) and "back office" systems (learning analytics, automated proctoring, risk scoring)(Idowu et al., 2024).

The Impact on Teaching

The evidence base indicates that the dominant near-term risks of generative AI in education are not speculative; they are measurable and already present at scale. Beyond academic use, learners are increasingly turning to AI for emotional and social support: around 40% report that AI affects loneliness, and approximately 15% use it for companionship or advice (Autonomy Institute, 2025). These patterns raise interconnected risks relating to academic integrity, learning quality, safeguarding, and mental wellbeing, alongside broader concerns around children's digital rights, including privacy, profiling, and potentially addictive design (ICO, 2020).

The impact on teaching is best understood as a paradox**:** AI offers measurable productivity gains while simultaneously creating new forms of labour and professional risk. Experimental evidence from England demonstrates clear efficiency benefits. A large, randomised trial found that teachers using ChatGPT reduced lesson and resource preparation time by 31% (equivalent to 25.3 minutes per week), with no observable decline in quality based on blinded expert review (EEF, 2024; NFER, 2024). However, real-world experience is more nuanced for educators with key barriers including the time required to learn AI tools and the need to verify and correct outputs, highlighting the emergence of verification labour that can offset productivity gains. This is reinforced by findings that educators often do not refine prompts effectively, suggesting that skills development remains a critical factor in realising AI's benefits (NFER, 2024).

A further dimension of this paradox lies in assessment and regulation. Time saved in lesson preparation is frequently offset by additional work associated with redesigning assessments, addressing academic integrity concerns, and supporting students in the ethical use of AI. Evidence suggests that 65% of students report significant changes to assessment practices, with some expressing anxiety about false accusations of misconduct (HEPI, 2026). Regulatory requirements further reinforce this workload shift: Ofqual emphasises that AI cannot serve as the sole basis for determining a student's mark and requires human oversight to ensure fairness, transparency, accountability, and contestability (Ofqual, 2024).

Across these risks, the most consistently supported mitigations include clear guidance on permitted AI use and disclosure; redesign of assessment toward authentic and process-based evaluation; explicit teaching of AI literacy and verification skills; cautious and procedurally constrained use of AI detection tools; and robust governance frameworks addressing fairness, transparency, and data protection (QAA, 2022).

Overall, UK evidence supports a "paradox" framing**:** generative AI can significantly enhance productivity and maintain quality in bounded tasks, but it simultaneously introduces new forms of work, particularly in verification, assessment redesign, safeguarding, and trust-building. As such, effective implementation requires treating AI adoption as a systemic change programme rather than a simple technological add-on. This includes investment in training, time, and governance, alongside practical strategies such as starting with bounded use-cases, critically evaluating outputs, and avoiding the inclusion of personal identifiable data in prompts (EEF, 2024; NFER, 2024).

The Impact on Learning

Over the past three years, I have integrated AI-powered simulation software from Bodyswaps into postgraduate teaching to support the development of conflict management and negotiation skills. This technology enables students to engage in immersive, scenario-based practice, allowing them to rehearse complex interpersonal interactions in a psychologically safe environment. The integration of AI across multiple learning formats, including AI-driven software and immersive virtual reality (VR) has had a demonstrably positive impact on student learning. AI-enabled environments support deeper engagement, increased confidence, and the development of higher-order skills through personalised, practice-based learning experiences. These approaches align with research demonstrating that AI-supported and experiential learning environments enhance motivation, skill acquisition, and knowledge retention (Luckin et al., 2018) while authentic learning design strengthens the application of knowledge in real-world contexts (Stevens et al., 2022).

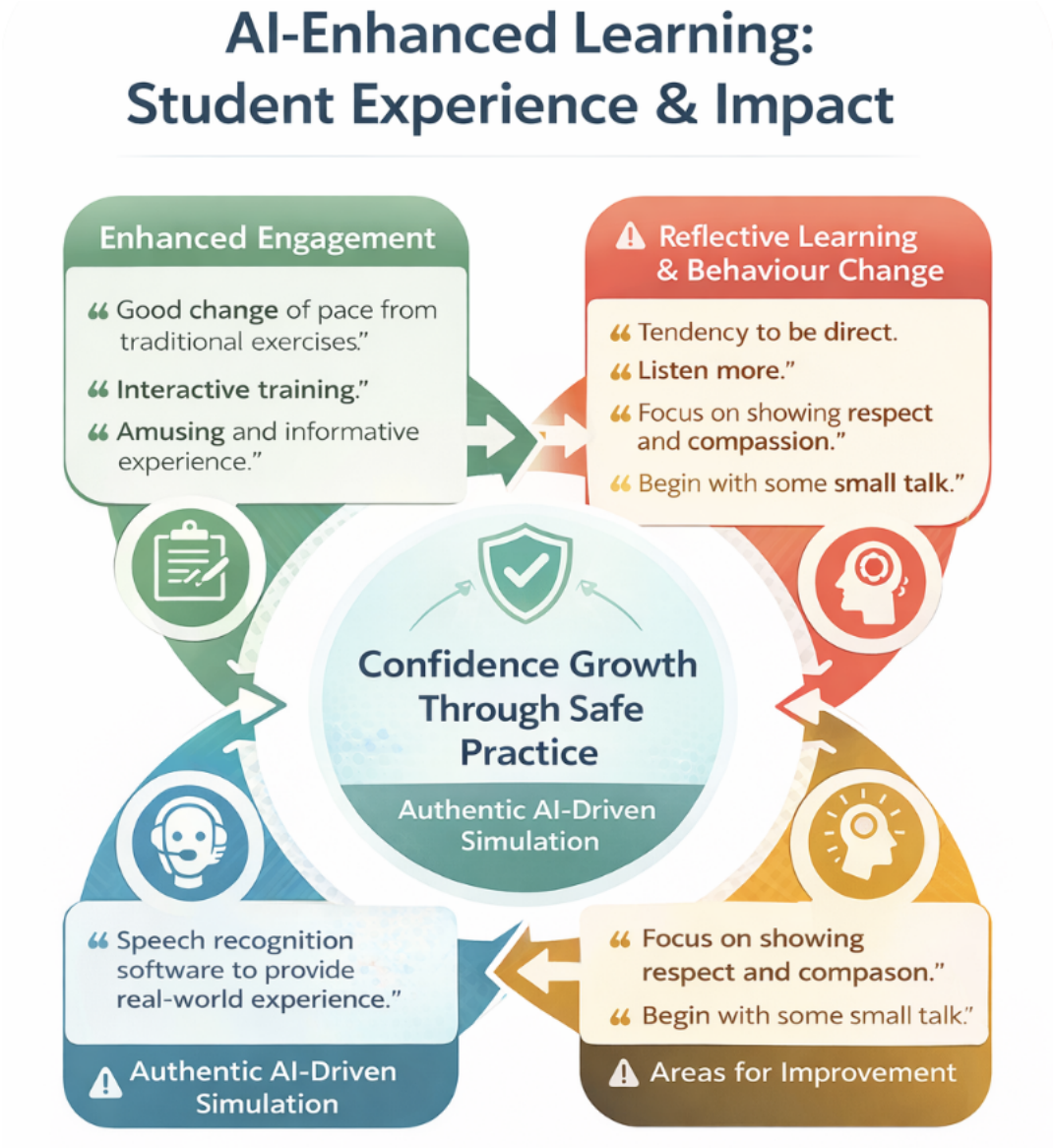

Figure 1: AI-Enhanced Learning: Student experience and impact

As illustrated in Figure 1, student feedback highlights a coherent pattern of learning impact across four interconnected dimensions: engagement, confidence development, reflective learning, and authentic skill application.

A key foundation of this impact is enhanced engagement, which supports deeper learning. Students consistently described the AI-enabled experience as more engaging than traditional methods, referring to it as a "good change of pace," "interactive training," and an "amusing and informative experience". High engagement levels (typically rated 7–10) indicate strong immersion, which is closely associated with improved attention, motivation, and learning outcomes. This aligns with evidence that immersive and interactive technologies enhance learner engagement and perceived value of learning (Radianti et al., 2020).

This engagement translates directly into increased learner confidence**,** particularly through opportunities for safe, repeated practice. Students reported significant gains in confidence, with one stating, "I am a good negotiator," and another describing the experience as "eye-opening" due to the opportunity for "exposure without the repercussions". These findings highlight the importance of low-risk environments in supporting skill development, allowing students to practise complex behaviours without fear of negative consequences. This is consistent with simulation-based learning theory, which emphasises the role of experience and repetition in building competence (Kolb, 1984; Lateef, 2010). Quantitative data further supports this, showing progression from moderate to high confidence levels following the activity (LJMU, 2026).

A further impact on learning is evident in reflective development and behavioural awareness**.** Students demonstrated increased self-awareness of their own communication styles, identifying tendencies such as a "tendency to be direct" and recognising the need to "work on deeply acknowledging the feelings of the counterpart". This reflective process is critical for deeper learning, enabling students to evaluate their performance and identify areas for improvement (Schön, 1983). Importantly, reflection translated into intended behavioural change, with students identifying specific strategies for future interactions, including to "listen more," "focus on showing respect and compassion," and "begin with some small talk". This indicates not only cognitive learning but also the development of interpersonal and professional skills.

The effectiveness of these outcomes is underpinned by the authenticity of the learning experience**.** Students highlighted the realism of the simulation, particularly the ability to practise communication skills in a context that closely mirrors real-world scenarios. Features such as "speech recognition software to provide real-world experience" enhance this authenticity, supporting the transfer of learning beyond the classroom. This aligns with research demonstrating that authentic, context-rich learning environments improve both knowledge application and skill transfer (Herrington et al., 2013; Radianti et al., 2020).

While the overall impact on learning is strongly positive, some limitations were identified that may affect the consistency of learning outcomes. Students noted technical issues, such as instances where the "avatar wouldn't register anything" or where more varied responses were needed. These challenges reflect broader findings that system reliability and responsiveness are critical to sustaining engagement and ensuring effective learning in AI-enhanced environments (Radianti et al., 2020).

Overall, the evidence demonstrates that AI-enabled simulations support a holistic model of student learning in which engagement drives confidence, which in turn enables reflection and behavioural development, all within authentic, practice-based environments. This suggests that AI-enhanced

learning is not only engaging but also supports meaningful cognitive, behavioural, and skills-based learning outcomes.

Children's Digital Rights

Children's digital rights require a careful balance between protection from harm and the promotion of participation, expression, and access to information. The United Nations Convention on the Rights of the Child (United Nations, 1989) provides a foundational framework, emphasising children's rights to privacy (Article 16), freedom of expression (Article 13), and access to information (Article 17). In digital contexts, these rights are operationalised through regulatory instruments such as the UK Age-Appropriate Design Code (ICO, 2020), which mandates that online services prioritise children's best interests, limit data collection, and ensure transparency. However, tensions persist between enabling participation and ensuring protection, particularly where safety measures may restrict autonomy (Livingstone et al., 2026).

Children's voices and lived experiences remain unevenly represented in the development of legislation and guidance. While participatory approaches are increasingly advocated (Third et al., 2021), policy frameworks often rely on adult-centric interpretations of risk, potentially overlooking diverse needs across age, culture, and digital literacy levels. This is particularly significant for vulnerable groups, including children with special educational needs and disabilities (SEND), care-experienced children, and those at risk of exploitation, whose digital experiences may differ substantially and require tailored safeguards (Stoilova et al., 2021). Drawing on my experience as a parent of two teenagers, AI-generated inaccuracies and "hallucinations" are frequently not identified, with information often trusted uncritically and used without sufficient evaluation. In addition, regulation of children's data within AI and EdTech ecosystems remains insufficiently robust. Although frameworks such as the UK GDPR and Children's Code impose obligations on data minimisation and purpose limitation, rapid innovation in generative AI challenges existing regulatory capacity (ICO, 2020; OECD, n.d.). Concerns include opaque data practices, profiling, and the use of children's data to train AI systems without meaningful consent.

Emerging digital risks further complicate this landscape. Algorithmic amplification can expose children to harmful or extreme content, while persuasive and addictive design features may undermine autonomy and wellbeing (Montgomery et al., 2017). The rise of generative AI introduces additional safeguarding concerns, including misinformation, synthetic relationships, and blurred boundaries between human and machine interaction. Addressing these challenges requires adaptive regulation, stronger accountability mechanisms, and the meaningful inclusion of children's perspectives to ensure that digital environments are both safe and rights-respecting.

Conclusion

Artificial intelligence is already reshaping education at pace, with clear evidence of both transformative potential and emerging risk. This submission demonstrates that AI can significantly enhance student learning, supporting engagement, confidence, and higher-order thinking, when it is intentionally integrated within structured, pedagogically safe environments. However, without appropriate guidance, governance, and investment, these benefits are uneven and may be offset by risks to academic integrity, critical thinking, and student wellbeing.

The key challenge is not whether AI should be used in education, but how it can be implemented responsibly and effectively. Addressing this requires a shift from reactive responses to a coordinated, system-level approach that prioritises assessment redesign, AI literacy, safeguarding, and ethical governance. Crucially, student experience must remain central to this process.

With the right frameworks in place, AI has the potential to act as a powerful enabler of learning rather than a threat to it. The priority for policymakers is therefore to ensure that its integration strengthens, rather than undermines, the core purposes of education.

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