The Need to Establish New Assessment Pathways in Higher Education Following the Rise of AI

The rapid advancement of artificial intelligence has catalysed one of the most significant shifts in higher education since the advent of mass online learning. Large language models, generative AI tools, and increasingly automated knowledge systems have altered how students write, problem-solve, research, and produce academic work. As institutions grapple with both the opportunities and challenges these technologies introduce, traditional assessment systems—many of which were designed for a pre-AI era—are no longer fit for purpose. There is a growing and urgent need to establish new assessment pathways in higher education that better reflect the digital landscape students inhabit, safeguard academic integrity, and support the development of authentic learning.

AI and the erosion of traditional assessment validity

Traditional assessment formats such as essays, literature reviews, take-home exams, and reports were historically reliable indicators of student understanding. They relied on assumptions about student authorship, access to resources, and the difficulty of synthesising information. AI has undermined these assumptions. A student using an advanced generative AI system can now produce a coherent 2,000-word essay in seconds, rewrite an article in their own "voice," or complete coding and data analysis tasks with minimal conceptual understanding. Even where institutions deploy AI detectors, the tools' inconsistency and susceptibility to false positives make them pedagogically and ethically unsound as gatekeepers of authenticity.

The problem is not simply cheating. The broader challenge is that AI has transformed the cognitive labour involved in producing assessed work. If an AI system can plan, draft, refine, and reference an essay more efficiently than a student, then the essay itself can no longer stand as evidence of learning. As AI assistance becomes normalised in professional settings, insisting that students produce "AI-free" work becomes increasingly artificial. Higher education must therefore pivot away from assessing products that AI can easily generate and move towards assessing processes, behaviours, and forms of understanding that AI cannot replace.

Re-centring assessment on learning rather than outputs

One response is to re-centre assessment design on the learning journey rather than the final artefact. Process-based assessments, such as research logs, annotated code histories, version-controlled submissions, or reflective accounts of decision-making, shift emphasis back to the student's intellectual trajectory. Instead of evaluating a polished final product, educators assess how students interpret feedback, revise ideas, justify analytical choices, or adapt methods in response to challenges.

This shift aligns with contemporary understandings of learning as iterative and dialogic. It also mirrors professional practice in many fields, where audit trails, collaborative tools, and transparent workflows are standard. Crucially, focusing on process creates a form of assessment that AI cannot fully automate, as it requires demonstration of judgement, adaptation, and metacognition—elements that remain uniquely human even in an AI-rich world.

Authentic assessments in an AI-enabled ecosystem

Authentic assessment, which situates tasks in realistic professional contexts, has gained renewed relevance. When assessments mirror real-world challenges that require creativity, critical evaluation, and interpersonal skills, AI becomes a tool—not a shortcut. For example, students might be asked to critique an AI-generated analysis and identify its weaknesses; collaborate on designing ethical guidelines for AI use within their discipline; produce multimodal outputs (presentations, code demonstrations, stakeholder pitches) that require live engagement; apply concepts to live data, local case studies, or contemporary debates that AI cannot predict in advance; engage in oral examinations, vivas, or in-class problem solving where reasoning must be demonstrated interactively.

Authentic tasks foreground skills such as communication, teamwork, ethical reasoning, and contextual judgement. These are competencies that cannot be simply outsourced to an algorithm and thus preserve assessment validity while preparing students for modern workplaces where AI fluency is expected.

Building AI literacy into assessment pathways

Rather than treating AI as a threat to integrity, institutions increasingly recognise the value of teaching students to use AI responsibly. New assessment pathways must therefore incorporate AI literacy as a core skill. This includes understanding how AI systems work, their limitations, their biases, and the ethical considerations surrounding their use. Assessments should encourage students to document when and how AI tools were used; evaluate the accuracy and reliability of AI-generated outputs; interpret AI recommendations critically; contextualise AI within disciplinary norms.

The need for multi-modal assessment portfolios

No single assessment format can ensure validity in the age of AI. A viable future lies in diversified assessment portfolios that combine multiple modalities. These may include process-based evidence, in-person assessments, collaborative projects, automated logs, reflections, and authentic workplace simulations. Together, they provide a holistic picture of student competence while reducing reliance on any one form of assessment vulnerable to AI outsourcing.

Re-establishing trust and integrity

Transparent, AI-integrated assessment design helps re-establish trust. When expectations for AI use are clear, when assessments focus on reasoning rather than recall, and when students can show authentic learning through diverse methods, integrity becomes built into the assessment architecture itself.

A systemic shift, not a temporary patch

Ultimately, the rise of AI marks a paradigmatic shift in knowledge work. Higher education cannot simply tweak existing assessments; it must redesign systems from the ground up.