

INTELLIGENT TECHNOLOGIES IN EDUCATION

Moving Education Ecosystems Beyond the Artificial Intelligence Hype

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Abstract

This editorial introduces the first issue in 2026 of Intelligent Technologies in Education (ITEd), which features emerging research exploring the transformative challenges and opportunities of generative artificial intelligence (GenAI) in higher education. The collective findings illustrate GenAI's pervasive impact across four main pillars: (1) curriculum design, (2) assessment integrity, (3) pedagogical practices, and (4) institutional policy. A central theme woven throughout the issue is the critical need for ethics and integrity, with multiple authors emphasizing that AI should augment rather than supplant human teaching. The featured research highlights proposed models to seamlessly integrate AI literacy into student competencies, while simultaneously warning that GenAI's capacity to perform strongly on rigorous tasks forces an urgent rethink of valid assessment designs. The issue also explores the complementary potential of AI in driving educational feedback and recommender systems, though it notes a significant support gap where instructors still face uneven guidance and policies. Rather than offering a checklist of responses to GenAI, this editorial develops a question-oriented agenda for future research on intelligent technologies across educational sectors. Echoing emerging calls to shift from prohibition toward pedagogical innovation, this editorial argues that moving beyond AI hype requires clearer educational purposes, stronger evidence, and a broader understanding of intelligent technologies as part of changing education ecosystems.

Keywords

Generative AI, intelligent technologies, higher education, AI literacy frameworks, assessment, GenAI ethics

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Introduction

Welcome to *Intelligent Technologies in Education* (ITEd). ITeD may be understood as emerging from a recognition that scholarship on technology and education would benefit from a broader and more integrative forum than one framed only around AI or only around higher education. This is pertinent, particularly at a moment when important conversations remain segmented across educational sectors and when other intelligent technologies also require careful conceptual and empirical attention. The journal is positioned as a diamond open access space for interdisciplinary dialogue among researchers, educators, and policymakers, with an emphasis on connecting theory, practice, and policy across educational contexts, while this inaugural editorial extends that vision by moving beyond narrow narratives of GenAI disruption and instead foregrounding curriculum, assessment, pedagogy, institutional policy, ethics, and human-centred adaptation as part of a wider educational agenda. In this sense, the vision of ITeD is to become a leading venue for cross-sector educational scholarship and for critical work on intelligent technologies beyond AI alone. This ambition does not rest on exaggerated claims of novelty. Rather, it depends on articulating a clearer editorial position that invites debate, identifies the questions that matter most, and creates space for contributions that can shape the direction of the field. That approach is consistent with Crawford's (2022) view of editorial leadership as a way of creating intellectual space where existing publication landscapes have been limited and of inviting scholarship that others can actively engage with. Scholars whose work speaks across educational boundaries, or who are examining intelligent technologies in ways that are theoretically grounded, methodologically rigorous, and practically meaningful, would therefore find ITeD a timely and worthwhile venue for submission.

This first issue makes clear why ITeD matters now. The central argument of this editorial is that the next phase of educational technology scholarship should be less tool-led and more question-led. The task is not simply to determine whether intelligent technologies are disruptive, useful, or risky, but to examine what forms of learning, judgement, participation, and institutional responsibility they constrain, or require us to reconsider. Intelligent technologies are no longer an emerging topic waiting at the edges of educational debate. They are already reshaping what is taught, how learning is assessed, how support is offered, and how institutions respond. The discussion that follows examines these developments and identifies the questions the field must now confront with greater clarity and urgency. Moving beyond hype does not mean dismissing intelligent technologies as temporary distractions. Rather, it means refusing to let the novelty of tools define the educational questions we ask. For ITeD, the more important task is to examine how such technologies redistribute agency, reshape assessment, mediate feedback, and alter the conditions under which educational value is created.

What the ITeD Issue 1 Says About AI in Education

This issue of *Intelligent Technologies in Education* (ITEd) brings together a collection of studies examining the challenges and opportunities of Generative AI (GenAI) in education. The collective findings highlight the pervasive impact of GenAI on curriculum design, assessment integrity, pedagogical practices, and policy. Acharya et al. (2026) analyse GenAI policies across Canada's research-intensive universities, identifying common emphases on ethical use, curricular integration, and institutional support for instructors and students. Wood (2026) demonstrates empirically that even carefully designed higher-order online assessments are vulnerable to GenAI. Specifically, ChatGPT-4 achieved A-level performance on critical-thinking quizzes, implying that higher-order questions alone cannot safeguard academic integrity. Chen et

al. (2026) propose a GenAI Competence Framework for engineering curricula, embedding ethics, technical skills, and domain knowledge in a human-centred learning loop. Schofield and Zhou (2026) introduce a five-step AI-Curriculum Alignment Model (AI-CAM) to help educators in non-technical disciplines integrate AI literacy at the module level. Koh et al. (2026) present initial validation of the AI-Teacher Teaching Task Spectrum (AITTTS), a framework assigning teaching tasks to AI or humans. Experts agreed that AI can handle routine, procedural tasks, but not creative or relational ones.

In Griffin and James (2026), the authors warn against over-reliance on “silver-platter” tools (from Grammarly to ChatGPT) and offer a responsible use of educational tools framework that encourages productive struggle and critical thinking even when AI tools are available. Pang et al. (2026) report that enabling undergraduate engineers to use ChatGPT in their learning significantly improved their critical thinking and information-literacy skills. Nonetheless, they caution on academic standards and “responsible use” to prevent misuse. Songe (2026) shows that in educational recommender systems, diversity of suggestions (beyond mere accuracy) critically affects user satisfaction, and simple priming (e.g. “focus on novelty”) can mitigate user biases. Roe et al. (2026) present findings from analysing a survey of students and staff in Asia, finding low familiarity with GenAI and mixed attitudes to AI-generated feedback. Both groups prefer AI as an adjunct to human feedback, and staff are more accepting of text-detection tools than students. Nikolopoulou (2026) interviews Greek preschool-teacher trainees using ChatGPT, finding generally positive experiences (speed, variety of ideas) but concerns about factual reliability and context-sensitivity.

Together, these papers reveal key themes and tensions. Ethics and integrity thread through the entire issue with many papers emphasizing that GenAI should augment (not supplant) human teaching (e.g., Acharya et al., 2026; Griffin & James, 2026; Roe et al., 2026). Curriculum and competency are major focuses, with proposed models (Chen et al., 2026; Schofield & Zhou, 2026) to guide integration of AI literacy and GenAI tools. Assessment and pedagogy emerge as critical frontlines. For instance, Wood (2026) and Pang et al. (2026) show that GenAI can outperform students on rigorous tasks, forcing a rethink of valid assessment design (cf. Zawacki-Richter et al., 2019). Conversely, Songe (2026) and Roe et al. (2026) explore complementary uses of AI (in feedback and recommendations) that can enhance learning if carefully managed. Several papers highlight the support gap: instructors often lack guidance on AI (Lee et al., 2024; Schofield & Zhou, 2026), and institutional policies remain uneven (Acharya et al., 2026).

These findings align with emerging research. Surveys show faculty worry about AI’s impact on integrity but also recognize its inevitability (Lee et al., 2024). Scholars urge proactive frameworks, and UNESCO (2023) and OECD (2023) call for ethical AI literacy in education. Holmes et al. (2023) and Selwyn (2024) argue for shifting from prohibition to pedagogical innovation. The ITed papers advance this agenda by offering concrete models and evidence. However, important gaps remain. First, few studies address how to upskill faculty (Schofield & Zhou, 2026), or how diverse student populations engage with GenAI (Nikolopoulou, 2026 touches on this, but more is needed across disciplines and cultures).

Where Might GenAI Research Go Next?

A stronger research agenda is unlikely to emerge from a simple list of desirable topics. As Corbin et al. (2025) argue in relation to assessment after AI, the problem is not only that educational practice is changing quickly, but that the research landscape has become fragmented and difficult to connect. This response is

to organise inquiry through framing questions that help scholars decide what kinds of studies are needed, why they matter, and how findings might speak to one another. That logic is equally useful here. The papers in this issue offer important early insights into curriculum, assessment, pedagogy, policy, feedback, and recommender systems, yet they also reveal the present centre of gravity of the field, namely higher education and GenAI. This concentration is understandable, given the disruptive effects of recent generative tools, but it also indicates where the next phase of scholarship needs to broaden its gaze.

That broadening is not simply desirable in intellectual terms. It follows directly from the journal's own aims and scope. The journal positions as an open access forum for interdisciplinary dialogue among researchers, educators, and policymakers, and visualises scholarship that connects theory, practice, and policy across educational contexts rather than within a single institutional sector. In that light, ITeD sets a wider agenda than a journal confined to AI, and certainly wider than one confined to higher education alone. The inaugural issue makes a strong start, but it also productively exposes a gap between the questions currently dominating the literature and the broader terrain the journal seeks to cultivate.

Three observations from this issue help explain how the following questions are derived. First, the issue shows that GenAI has unsettled familiar assumptions about assessment validity, academic integrity, and curriculum design, which means future research cannot remain at the level of reaction or institutional workaround. Second, several contributions suggest that educational value lies not in automation alone, but in the relationship between intelligent technologies and human judgement, productive struggle, feedback, and ethical responsibility. Third, although the issue includes promising work on recommender systems, teacher education, and feedback, much of the present evidence remains concentrated on university settings and on one family of technologies. If ITeD is to realise its wider scope, then the next stage of inquiry should move from a tool centred agenda towards a question led programme of research that can travel across sectors and across forms of intelligent technology.

We therefore suggest that future research should be organised around six connected dimensions: purpose, context, technology, pedagogy and assessment, capacity and governance, and method. These dimensions are not intended as a checklist, but as a way of helping scholars connect individual studies to a broader programme of inquiry.

- 1. Purpose: What educational purposes should intelligent technologies serve?** Research should begin with purposes rather than platforms. The central issue is not whether GenAI, recommender systems, detection tools, or other intelligent technologies can be inserted into educational practice, but what forms of learning, judgement, creativity, and participation they are meant to support. This question follows from the issue's concern with AI literacy, productive struggle, and human centred adaptation, and it aligns with the journal's commitment to work that advances both theory and practice.
- 2. Context: How do intelligent technologies reshape education across sectors, stages, and transitions?** A notable gap in current debate is the tendency to treat higher education as the default site of inquiry. Yet the proposal explicitly imagines a readership and contributor base that includes educators at any level, while the editorial itself already points beyond the university through work on preschool teacher education and broader educational technologies. Future studies should therefore examine how questions of curriculum, assessment, capability, and governance differ across schooling, teacher education, tertiary study, professional learning, and lifelong education, and how insights travel, or fail to travel, between these sites. This is especially important if the journal is to challenge the siloed structure of current scholarship.

3. **Technology: Which intelligent technologies are under examination, and what assumptions do they embed?** The field would benefit from greater conceptual precision about its object of study. GenAI currently dominates discussion, but the issue also includes recommender systems and feedback technologies, while the journal's title invites attention to a much wider ecology of intelligent systems. Future research should therefore avoid collapsing intelligent technologies into GenAI alone. Comparative work is needed on how different systems distribute agency, shape knowledge practices, structure attention, and privilege certain forms of evidence or behaviour. Such an approach would better match the journal's broader remit and would reduce the risk of reproducing the hype cycle that the editorial itself seeks to move beyond.
4. **Pedagogy & Assessment: Under what pedagogical and assessment conditions do these technologies support learning, integrity, and equity?** The issue makes clear that familiar assumptions about valid assessment can no longer be taken for granted, and that staff and students do not respond to AI enabled feedback, detection, or assistance in uniform ways. This suggests that the key research problem is not whether intelligent technologies are beneficial or harmful in the abstract, but the conditions under which they support or undermine meaningful learning. Comparative studies of oral assessment, project work, portfolios, feedback arrangements, and curriculum design would be especially valuable here, particularly when they examine how integrity, inclusion, and learner agency are shaped in practice rather than assumed in policy.
5. **Capacity & Governance: What forms of professional learning, institutional capacity, and governance are required?** Several papers in the issue point to uneven policy environments and to a persistent support gap for educators. This indicates that technology adoption is also a question of labour, capability, and institutional design. Future research should examine faculty development, staff agency, leadership, and policy formation as core parts of the educational problem rather than as background conditions. This would align closely with the proposal's invitation to policy analyses and with its aim to engage researchers, practitioners, and policymakers in the same conversation.
6. **Method: What kinds of research designs are adequate to this agenda?** The methodological profile of the issue is promising, but still weighted towards qualitative, mixed methods, and pilot studies. The next phase should include more longitudinal research, multi-site comparisons, studies across national settings, and designs that connect institutional policy with classroom practice and learner outcomes. It should also include research that is co designed with students, educators, and other stakeholders, since many of the questions raised here concern contested values as much as measurable effects. In this respect, the journal is well placed to invite empirical, conceptual, review based, and policy-oriented work that can connect isolated findings into a more cumulative field of inquiry.

Methodological trends

The papers in this issue predominantly employ qualitative and mixed methods: content analysis of policy (Acharya et al., 2026), qualitative interviews (Nikolopoulou, 2026), thematic surveys (Roe et al., 2026), and pilot mixed designs (Koh et al., 2026; Pang et al., 2026). Only a few use large-scale quantitative methods. Going forward, multi-site surveys and experiments will be crucial to validate frameworks and to test generalizability. Researchers should ensure rigor (e.g. by triangulating interview insights with usage data) and transparently report limitations (as Wood, 2026 does). Given AI's rapid evolution, iterative design-based research is recommended: develop interventions (e.g. AI-CAM) in close collaboration with practitioners and refine them through action research. Cross-disciplinary scholarship (melding educational theory with AI and cognitive science) will yield the deepest insights. Table 1 below compares each ITed

We therefore invite researchers, educators, practitioners, and policymakers to join us in shaping that conversation. Whether the work is empirical, conceptual, methodological, or policy-focused, we hope ITeD will become a home for scholarship that takes both educational complexity and technological change seriously. If this first issue marks a beginning, it should be understood not simply as the launch of another venue responding to the latest technological disruption, but as an invitation to build a more connected field of inquiry.

Table 1. Summary of ITeD Q1 2026 papers. All findings and implications are drawn from the cited papers.

Paper (Authors, Year)	Research question	Methods	Sample	Key findings	Implications
Acharya, et al., (2026)	What challenges do Canadian universities face in GenAI policy?	Qualitative content analysis	GenAI policy documents from 15 Canadian U15 universities	Identified 3 main themes: ethical/transparent use, curriculum integration, and institutional support for GenAI. Policies varied across institutions.	Universities need coherent, flexible GenAI policies that guide teaching practice without stifling innovation (balance restrictions and affordances). Institutions should support faculty training in GenAI.
Wood, (2026)	Can higher-order online assessments deter GenAI use?	Experimental case study with ChatGPT	Questions from a critical thinking course over 2 years	ChatGPT-4 and 4o scored A–A+ on challenging MCQs, outperforming ChatGPT-3.5. Higher-order questions alone did not prevent AI success.	Assessment design must evolve; consider new formats (e.g., performance tasks, authenticity) and redefine validity so that learning outcomes hold even if AI tools are used.
Chen, et al., (2026)	How to embed GenAI competencies in engineering curricula?	Conceptual framework design	N/A (theoretical)	Proposed a cyclical, human-centred GenAI Competence Framework (Fig. 1) that integrates technical skills, ethics, and domain applications (based on an AI literacy framework).	Guides curriculum developers to sequentially build GenAI literacy (foundations to advanced) and to include reflection on AI ethics. Prepares graduates for AI-rich workplaces.
Schofield, & Zhou, (2026)	How to systematically integrate AI literacy at the module level?	Model development + illustrative example	Example BSc business module	Developed a five-step AI Curriculum Alignment Model (AI-CAM): define outcomes, align assessments, choose AI tools, design activities, and evaluate. Illustrated implementation in a data analysis course.	Practical guide for non-CS instructors to infuse AI literacy. Emphasizes constructive alignment and ongoing evaluation of AI integration. Highlights educators’ upskilling needs.
Koh, et al., (2026)	How to categorize teaching tasks for AI vs. human?	Literature review + expert survey	AI/education experts (survey)	Validated the AI-Teacher Teaching Task Spectrum (AITTS): strong agreement that AI suits procedural/knowledge tasks. Less agreement on creative/relational tasks.	Provides a preliminary taxonomy to help educators delegate tasks to AI appropriately. Indicates need for further research with more experts for generalizability.
Griffin, & James, (2026)	How can educators encourage	Conceptual framework development	N/A (theoretical)	Introduced the Responsible Use of Educational Tools framework and teaching model. Emphasize	Advises teaching students critical evaluation when using AI/tools. Calls for curriculum that normalizes

	productive struggle amid easy tools?			“productive struggle” as key to meta-cognition and caution that tools (Grammarly, ChatGPT) can short-circuit learning.	challenging problem-solving and students’ reflection on tool use.
Pang, et al., (2026)	How does ChatGPT affect transferable skills (writing, thinking)?	Cohort comparison (quasi-experiment)	Undergrad engineering students (control vs. ChatGPT-assisted cohort)	Students using ChatGPT showed significant gains in critical thinking and information literacy (Mann–Whitney U, $p < .05$). ChatGPT helped with brainstorming and clarity. Ethical use remained a concern.	Suggests integrating AI tools to develop skills, rather than viewing them solely as threats. Universities should teach responsible use and update academic standards (to ensure evaluations account for AI use).
Songer, & Yamamoto, (2026)	How do recommendation diversity and traits affect ERS satisfaction?	Two within-subject experiments	University students (n ~100 per experiment)	User satisfaction depended on accuracy and diversity/novelty of recommendations. Priming participants to focus on accuracy or diversity led to more consistent ratings, mitigating trait effects.	Recommender systems in education should explicitly balance accuracy with diversity. UI/priming strategies (e.g. asking “Do you want novel suggestions?”) can improve learner satisfaction.
Roe et al., (2026)	What are student/staff attitudes to AI feedback and detection?	Survey + thematic analysis	Students (n=282) and staff (n=35) at universities in Vietnam & Singapore	Both groups had low GenAI familiarity. AI-generated feedback was viewed skeptically (beneficial only when coupled with human feedback). Staff were more willing than students to use text-detection tools for grading. Themes: unclear knowledge of detectors, mixed experiences, and ambivalence about AI’s future role.	Institutions need training on AI tools (for both students and faculty) and clear policies on AI in assessment. When implementing AI feedback, pairing with human guidance increases acceptance.
Nikolopoulou (2026)	How do preservice teachers experience ChatGPT in learning?	Qualitative interviews	17 Greek preschool-teacher students	Students appreciated ChatGPT’s speed and breadth for lesson planning, creative ideas, and social/ICT strategies. However, they worried about factual reliability and vagueness. Multi-step prompting was used to improve answers.	Recommends embedding AI literacy in teacher education: train future teachers to critically evaluate AI content and to formulate precise queries. Universities should develop policies and training for safe AI use.

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