

Innovative Practice Grants

“AdvanceHE

2026



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Foreword

We're very pleased to share the case studies from the 2025/26 round of Innovative Practice Grants. The Grants are awarded annually to small, specialist and college-based higher education institutions across the UK for sharing good practice as a short form case study. The scheme gives smaller institutions a platform to share their innovations, and many of the insights are applicable across higher education institutions of all shapes and sizes.

This year we have awarded 16 Grants covering several themes such as employability, student success and inclusion. As with this year's Global Impact Grants, which are available [here](#), there is an understandable focus on artificial intelligence, and institutions trying to find the best ways to use the technology even as it develops rapidly. This is paramount for smaller institutions who potentially operate with smaller budgets and staff resource, so finding ways of being more productive and efficient can help their long term sustainability. But again, there are clear lessons which can be learnt across the higher education ecosystem.

We'd like to thank all of the authors and contributors for their work in producing such insightful and impactful case studies, and hope there are ideas and projects that you can adapt and use in your own institutional context.

Nick Skeet, Director of Membership & Global Development



Embedding literacy and numeracy in PCET teacher education: an action research study to build student teacher confidence

Alexandra Clarke, Bridgend College

Rationale and context

This case study is based on a small-scale action research project I carried out within our PGCE/PCE PCET programme, exploring the question: How can I support student teachers to build confidence in embedding literacy and numeracy within their teaching practice?

Through Teaching Practice Observations (TPOs), I identified that although student teachers were expected to embed literacy and numeracy, this was not happening as effectively as it should. Student teachers were based across a range of subject areas, mainly vocational (such as construction, hair and beauty, health and social care, engineering), where embedding these skills is a key part of teaching.

I was observing that embedding was often limited or surface level, and many student teachers reported that they did not feel confident doing it. This is not unique to this group. Within further and adult education, literacy and numeracy are often seen as separate from vocational teaching rather than embedded within it (Education and Training Foundation, 2019). At the same time, there is an expectation that teachers develop learners' core skills as part of preparing a future-ready workforce (Donaldson, 2015).

Early discussions and questionnaires reinforced this, with literacy and numeracy often seen as separate from subject teaching and something student teachers lacked confidence in. Numeracy, in particular, came up frequently, with some openly stating they would avoid it.

One student teacher commented: **“I would not know where to start with numeracy in my lessons, so I tend to leave it out.”**

Another reflected: **“I know it is important, but it feels like something separate from what I teach.”**

If teachers lack confidence, they are less likely to embed these skills in meaningful ways. This project therefore focused on supporting student teachers to build confidence in embedding literacy and numeracy within their own subject areas.

The initiative (scope and timeline)

This was a small action research project carried out over one academic year with 48 PGCE/PCE learners. The project followed a simple action research cycle:

- initial questionnaires and discussions around confidence
- short inputs built into taught sessions
- opportunities to trial ideas in placement
- follow-up reflections and feedback.

The aim was not to formally teach literacy and numeracy, but to build confidence through regular, practical strategies.

The approach

The approach was simple and low pressure, with a clear focus on developing student teachers' own skills and supporting them to apply these within their teaching. I introduced 10-minute “skills starters” at the beginning of sessions. These focused on building student teachers' confidence in their own literacy and numeracy skills, including areas such as basic calculations, interpreting data, spelling, punctuation and the use of subject-specific terminology. This was then followed by longer tutorial discussions and workshops, which focused on how these skills could be embedded naturally within their teaching practice.



For example:

- Hair and Beauty: ratios, scheduling clients, price lists, defining key terminology, designing brochures
- Construction: measurements, estimating materials, reading plans, scaling drawings, health and safety terminology
- Health and Social Care: recording observations, using professional terminology, report writing, interpreting care plans, communication skills
- Engineering: measurements and tolerances, interpreting diagrams, sequencing processes, data recording, technical vocabulary.

A key focus was showing that these skills were already part of their subject areas, rather than something additional.

All activities were clearly linked to subject contexts. Generic tasks were avoided, as these often reinforced the idea that literacy and numeracy sit outside normal teaching practice. Discussion was central. Student teachers shared what they were already doing, and this was built on during sessions. This helped reduce pressure and made embedding feel more manageable.

What happened

At the start, confidence was generally low, especially around numeracy, with some student teachers openly avoiding it. Over time, there was a clear shift. Student teachers began to:

- talk more positively about embedding literacy and numeracy
- share examples from their teaching
- try out small ideas in placement.

One student teacher commented: “I always avoided numeracy before, but now I can see where it actually fits into what I teach.”

Another reflected: “It feels more manageable now, I do not feel like I have to change everything, just add small things in.”

The short starters worked well as prompts, but tutorials had greater impact, allowing time for discussion and reflection. Embedding also began to feel less like an additional requirement and more like a natural part of teaching.



Impact on practice

The main impact was increased confidence and willingness to try. Many student teachers moved from avoiding numeracy to including it in small, purposeful ways. For example:

- using real measurements within tasks
- embedding key terminology into practical activities
- using questioning to develop understanding.

Student teachers also reported improved learner engagement when literacy and numeracy were clearly linked to the subject.

One noted: “They engaged more when it was clearly linked to the practical side, rather than just being added in.”

This was consistent across learner reflections and observations. A strong example was a Beauty Therapy lecturer who had initially felt numeracy was not relevant and lacked confidence. During observation, she embedded numeracy through client appointment timings, prices, measurements and mixing ratios. Learners engaged well because it felt relevant and purposeful.

Key findings and reflections

A key finding was that confidence is a significant barrier. While some student teachers had the underlying skills, many lacked both the confidence and, in some cases, the skills to embed literacy and numeracy effectively.

This reflects wider findings in adult learning in Wales, where practitioner confidence and skill are key factors in effective delivery (Estyn, 2025). Short, regular inputs worked well because they were manageable. Student teachers were not expected to redesign lessons, but to try small changes. Relevance was also key, with higher engagement when linked to vocational contexts. Time remained a challenge, and confidence was still developing for some.

Next steps

Following the project, elements of this approach have been embedded more clearly within the PGCE programme, ensuring a more consistent focus on developing confidence in embedding literacy and numeracy. Subject-specific examples have also been developed to support ongoing practice. Overall, this project highlighted the importance of confidence alongside competence. It reinforced that embedding is not just about strategies, but confidence to apply them. Using an action research approach allowed me to test small changes and identify what worked in practice (McNiff, 2017).

Small, consistent changes had more impact than one-off sessions, particularly in supporting student teachers to embed literacy and numeracy in ways that feel natural and relevant.



References

- Donaldson, G (2015) Successful futures: independent review of curriculum and assessment arrangements in Wales. Cardiff: Welsh Government.
- Education and Training Foundation (2019) Embedding English and maths: guidance for practitioners. London: Education and Training Foundation.
- Estyn (2025) Literacy, numeracy and digital skills in adult learning in the community. Cardiff: Estyn. Available at: estyn.gov.wales/app/uploads/2025/09/Literacy-numeracy-and-digital-skills-in-adult-learning-in-the-community.pdf [accessed January 2026].
- McNiff, J (2017) Action research: all you need to know. London: Sage.

From correction to reflection: a Socratic AI tutor to deepen engagement with feedback

Audrey Picard, ESCP Business School London

Introduction

In higher education, written feedback is central to student progression. Yet across disciplines, students often focus on grades rather than engaging deeply with annotated comments. As a result, recurring errors and structural weaknesses persist. This challenge extends beyond language learning to essay writing, structured reports, business case analyses and research projects.

At the same time, artificial intelligence (AI) is increasingly positioned as a tool to enhance learning through personalisation and accessibility. However, its impact depends not on availability but on pedagogical integration (Holtbrügge et al, 2025).

This case study presents a two-year iterative intervention within a French A2 course at ESCP Business School, using a purpose-built Socratic chatbot (Amélie) to scaffold structured revision and deepen engagement with feedback.

Context and development of the intervention

The initiative emerged in April 2024 from a pedagogical concern: students were not engaging meaningfully with feedback given on written continuous assessment (CA) work, and their final exam (FE) written productions showed little to no improvement. An initial experiment (2024–25) allowed students to use unrestricted AI tools to revise their coursework. While this increased engagement with the revision process, it also revealed important limitations.

Many students used AI to generate corrected versions rather than to understand their mistakes, resulting in improved surface accuracy but limited transfer of learning to subsequent tasks. In addition, there was little visibility for the teacher on how students were interacting with AI, making it difficult to assess the learning process itself.

These observations informed the redesign of the intervention in 2025–26, shifting from open AI use to a structured, assessment-integrated approach focused on guided reflection and transparency. In response, the intervention was redesigned in 2025–26 around three principles:

1. Preserve cognitive effort (no automatic correction)
2. Scaffold reflection through guided dialogue
3. Maintain human verification and academic integrity.

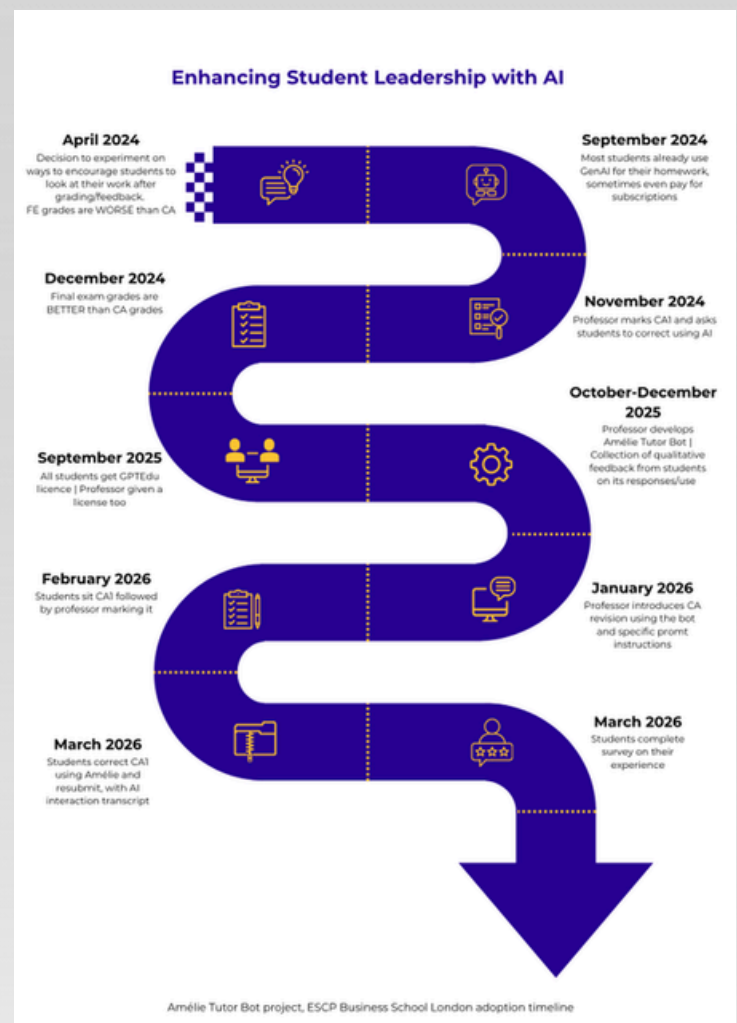


Figure 1. Amélie project timeline, ESCP Business School London adoption

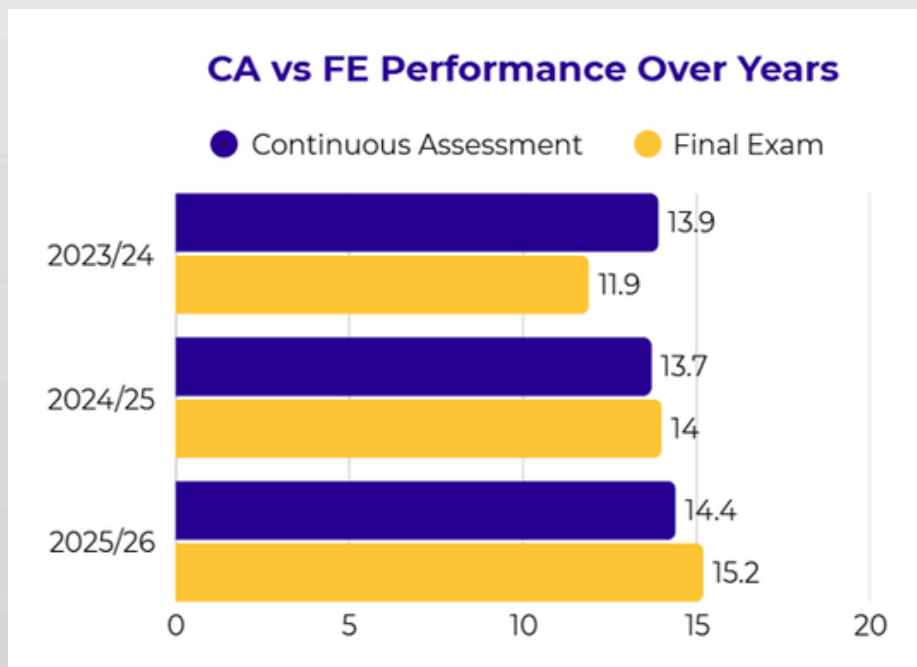


Figure 2. Three-year grade analysis of continuous assessment vs final exam.

Pedagogical rationale

Research shows AI can support active learning when used as a tutor or coach rather than an answer generator (Otto et al, 2025). The intervention, therefore, positioned AI as a reflective partner rather than a shortcut. This approach also responds to concerns about over-reliance on generative AI, which can limit the development of higher-order thinking when used without pedagogical framing. By structuring interaction and requiring students to justify and reflect on corrections, the intervention aimed to maintain cognitive engagement while leveraging AI as a support tool rather than a substitute for learning.

AI was also consciously considered as the main tool for feedback for its class time-saving benefits and accessibility. Students could decide when/where to complete the task and felt no sense of judgement or hierarchy while working on the correction.

The intervention design

Students completed an in-class written assessment. Feedback was provided as annotations without corrections.

They then interacted with the Amélie chatbot, designed to:

- ask guiding questions
- prompt self-reformulation
- support structure and language improvements
- avoid direct corrections.

The prompt provided to students was carefully designed to guide the interaction. It required them to input their original work, ask the bot to help them identify the type of error, propose a correction and justify their choice before validating it with the chatbot. This structured sequence ensured that students remained cognitively active throughout the process and prevented passive acceptance of AI-generated suggestions.

The integration of the chatbot interaction into assessment criteria also ensured accountability and transparency in AI use.

Students submitted a revised text and their chatbot interaction. The teacher re-marked based on both output quality and engagement depth.

Outcomes and impact

Quantitative data shows progression across cohorts:

- 2023–24: Coursework 13.9 → Exam 11.9 (-2, knowledge not retained)
- 2024–25: Coursework 13.7 → Exam 14.0 (+0.3, modest improvement)
- 2025–26: Coursework 14.4 → Exam 15.2 (+0.8 strongest gain)

As shown in Figure 2, the control cohort declined between coursework and the exam, suggesting limited retention. The 2024–25 cohort showed modest improvement, indicating better consolidation. The 2025–26 cohort achieved the strongest gains following the introduction of structured AI-supported revision, suggesting guided interaction may enhance both immediate performance and longer-term learning.

Qualitative findings indicate improved error awareness, deeper engagement and stronger self-correction skills. Students reported that the process was more time-consuming but significantly more effective.

“I love that the bot doesn’t answer your questions directly, but at the same time points you in the right direction. I also love that, as a real teacher would do, the bot has a really positive and encouraging tone and compliments you when you can correctly complete a task.”

“It was a new approach that helped me to discover how to use better AI in order to correct my mistakes by learning and not just ask it to do it.”

These findings align with cognitive load theory, suggesting effortful processing supports deeper learning (Sweller, 1988).

Transferability beyond linguistics

The issue of limited engagement with feedback is cross-disciplinary. Based on its core principle of structured reflective dialogue, rather than content generation, this model has broad applicability and can be easily adapted to essays, reports, research assignments and project-based work across a variety of subject areas.

Challenges and workload considerations

The main challenge was the instructor's workload in reviewing chatbot transcripts.

Future improvements include:

- structured reflection summaries
- sampling interactions
- rubric-based evaluation
- peer discussion integration.

Achieving an appropriate level of depth will be essential to scaling this project further. This also highlights a broader challenge in AI integration of balancing the pedagogical value of process visibility with the practical limitations of academic workload.

Conclusion

This case study demonstrates that AI, when carefully designed, can deepen engagement with feedback rather than undermine it.

By shifting AI from production to reflection, the approach supports the development of metacognition and feedback literacy and promotes student autonomy. It offers a scalable and transferable model for embedding AI into assessment design, with the potential to enhance student engagement and learning experience across a variety of disciplines.

References

Holtbrügge, D, Wicht, L and Bernhard, T (2025) ‘The use and usefulness of artificial intelligence in international business education’, *The International Journal of Management Education*, 23 (3): 101258.

Otto, S, Lavi, R and Bertel, L B (2025) ‘Human-GenAI interaction for active learning in STEM education’, *Computers and Education*, 239: 105444.

Sweller, J (1988) ‘Cognitive load during problem solving: effects on learning’, *Cognitive Science*, 12 (2): 257-285.

Authentic Tutorial Questions: assessing independent engineering judgement in an AI-rich world



Dr James Atuonwu, New Model Institute for Technology and Engineering (NMITE)

Context and challenge

The widespread availability of generative AI has fundamentally challenged the validity of traditional engineering assessment. Tasks based on procedural problem-solving, standard derivations, or structured explanations can increasingly be completed with minimal independent reasoning. While this raises concerns about authorship, it also exposes a deeper issue: whether prevailing assessment practices adequately capture the interpretive, modelling and diagnostic reasoning required in engineering practice.

Conventional responses have often involved reinforcing invigilated examinations or restricting AI use. However, such approaches risk reducing authenticity and do not necessarily assess the forms of reasoning engineers apply in real contexts, where problems are ill-defined, data is incomplete and decisions must be made under constraint. This case study presents Authentic Tutorial Questions (ATQs) as an alternative approach that preserves both rigour and relevance while ensuring clear evidence of individual capability.

Approach and implementation

ATQs were developed and implemented in a Level 4 Thermofluids Engineering module within an integrated engineering programme. Rather than functioning as a standalone assessment format, ATQs were embedded within a structured Build–Test–Design (BTD) learning and assessment architecture (see Figure 1), delivered over three sessions (approximately six contact hours).

Students worked with multiple thermodynamic systems representing different physical processes, including a Stirling engine (heat-to-work conversion), a passive evaporative cooling system (mass transfer) and a thermoelectric refrigeration system (work-driven heat transfer). Across these systems, students constructed or configured setups, collected measurements and observed system behaviour over time.

Formative activities were structured as Socratically framed question sets requiring students to:

- define system boundaries and apply conservation principles
- interpret dynamic behaviour and transient response
- estimate performance metrics from experimental data
- justify modelling assumptions
- evaluate system limitations and design trade-offs.

These activities functioned as formative micro-assessments aligned with the ATQ framework, progressively developing modelling and interpretive capability across contexts.

Within this architecture, the ATQ functions as a summative compression point, requiring students to synthesise reasoning developed across the BTD cycles. By grounding responses in student-generated data and context-specific reasoning, the approach significantly limits the usefulness of AI-generated outputs.

Impact and observations

Qualitative observations indicate that ATQs had a strong impact on student engagement and the nature of reasoning demonstrated.

Students engaged more directly with their own experimental data, demonstrating increased ownership of their analysis. Their responses were more context-specific and defensible, reflecting a deeper integration of theory and observation. The requirement to work under controlled conditions ensured clear evidence of individual capability, addressing a key limitation of coursework-based assessment in AI-rich environments.

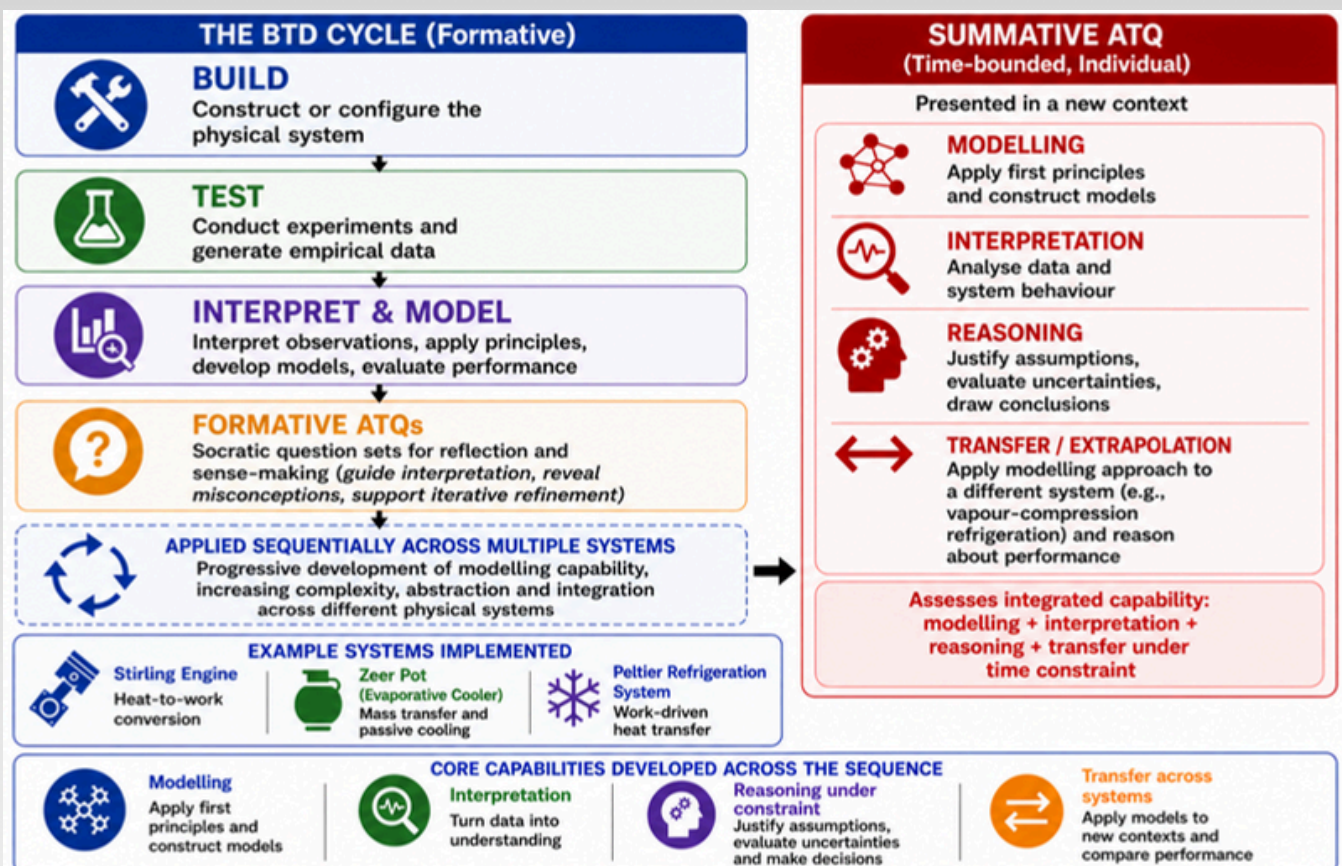
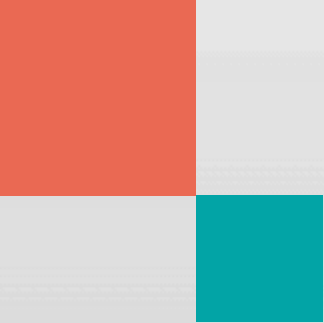


Figure 1. Build-Test-Design (BTD) architecture for ATQ: Formative development across multiple systems culminating in a summative ATQ



Students also demonstrated improved ability to:

- articulate modelling assumptions explicitly
- interpret system limitations and non-ideal behaviour
- apply theory diagnostically rather than procedurally
- connect empirical trends to underlying physical principles.

Compared to conventional assessments, responses showed greater depth of reasoning and reduced reliance on generic or template-based answers. A notable observation was the challenge of transfer. While students performed well within familiar system contexts during formative activities, many found it more difficult to apply similar reasoning to a new system in the summative ATQ. This resulted in incomplete modelling assumptions, limited interpretation of data trends and fragmented reasoning.

Rather than indicating failure, this pattern highlights the diagnostic value of ATQs. By requiring students to reason beyond familiar problem structures, the assessment makes visible the extent to which modelling understanding has been internalised and can be applied across contexts. In this sense, ATQs do not merely evaluate performance but reveal critical points for conceptual development.

Importantly, the authenticity of the task preserved engagement. Students recognised the relevance of the assessment to real engineering practice, particularly in interpreting data and making decisions under constraint.

Transferability and key takeaways

ATQs provide a scalable and transferable approach to assessment design in AI-enabled education. The framework can be adapted across engineering disciplines and extended to different forms of reasoning, including modelling, diagnosis, design justification and trade-off analysis.

Key elements that can be adopted by other educators include:

- structuring assessment around student-generated data or context-specific scenarios
- embedding assessment within a Build–Test–Design sequence
- using time-bounded, controlled conditions to ensure individual accountability
- focusing on interpretation, modelling and judgement, rather than procedural recall
- designing assessments as summative compression points integrating prior learning.

Importantly, ATQs are not intended to replace all forms of assessment but to complement existing approaches by targeting capabilities that are otherwise difficult to assess reliably.

Conclusion

Authentic Tutorial Questions offer a practical and robust response to the challenges of assessing engineering students in an AI-rich world. By combining authenticity with controlled conditions, the approach ensures that individual capability can be reliably evidenced while maintaining alignment with professional engineering practice.

More fundamentally, the integration of ATQs within a Build–Test–Design architecture repositions assessment as a mechanism of engineering formation. By requiring students to reason from physical observation through abstraction to transfer across contexts, the framework supports the development of engineers capable of modelling, interpretation and judgement in complex, technology-mediated environments.

Embedding AI in nuclear engineering assessment: a scalable model for developing digital and analytical capability in safety critical contexts

Chris Fairclough, Lakes College West Cumbria

Introduction and context

The rapid adoption of generative AI has transformed higher education contexts, with recent evidence indicating that 88% of students now engage with AI tools within assessed work (Freeman, 2025). Despite this shift, the systematic integration of AI into assessment design remains underdeveloped, particularly within college-based higher education.

This case study presents an assessment innovation within a Level 5 Foundation Degree in Decommissioning and Waste Management. The assessment was designed around a realistic nuclear decommissioning scenario, requiring students to develop a strategy for a legacy facility characterised by incomplete records, evolving hazards and regulatory constraints. Within safety critical industries, professionals are required not only to interpret complex data, but also to exercise informed judgement in uncertain and high consequence environments.

The initiative aimed to explore how AI could be embedded into assessment in a manner that enhances analytical capability, supports digital literacy and reinforces the importance of professional judgement in safety critical contexts. It aligns with emerging sector frameworks which emphasise structured and intentional integration of AI into assessment, positioning it as an augmentative tool rather than a substitute for learning (Perkins, Roe and Furze, 2024).

The intervention: assessment design and implementation

The assessment was structured as a four-stage, scaffolded process delivered over a 12-week semester, enabling progressive development of knowledge and skills. This is represented in Figure 1.

Initially, students were required to analyse the decommissioning scenario, identifying key hazards, operational constraints and information gaps. This stage established a foundation in contextual understanding and risk awareness.



Students then developed a human-derived decision flowchart, outlining a structured approach to decommissioning. This required them to synthesise technical knowledge, apply logical sequencing and justify decision points in relation to safety and operational priorities.

The third stage introduced AI as a tool to support decision-making. Students used structured prompting, guided by the PARTS framework (Purpose, Audience, Role, Task, Style), to generate an alternative AI-derived flowchart. The use of structured prompting was critical in ensuring outputs were relevant, contextualised and aligned to the assessment task. This reflects wider evidence that AI-supported assessment is most effective when scaffolded through clear frameworks and iterative engagement (Furze et al, 2024).

The final stage required a critical comparative analysis between human generated and AI generated outputs. Students were asked to evaluate the strengths and limitations of each approach, with particular focus on safety, regulatory compliance and contextual accuracy.

This design positioned AI not as a replacement for human thinking, but as a cognitive partner, supporting analysis while requiring students to exercise independent judgement (Corbin et al, 2025).

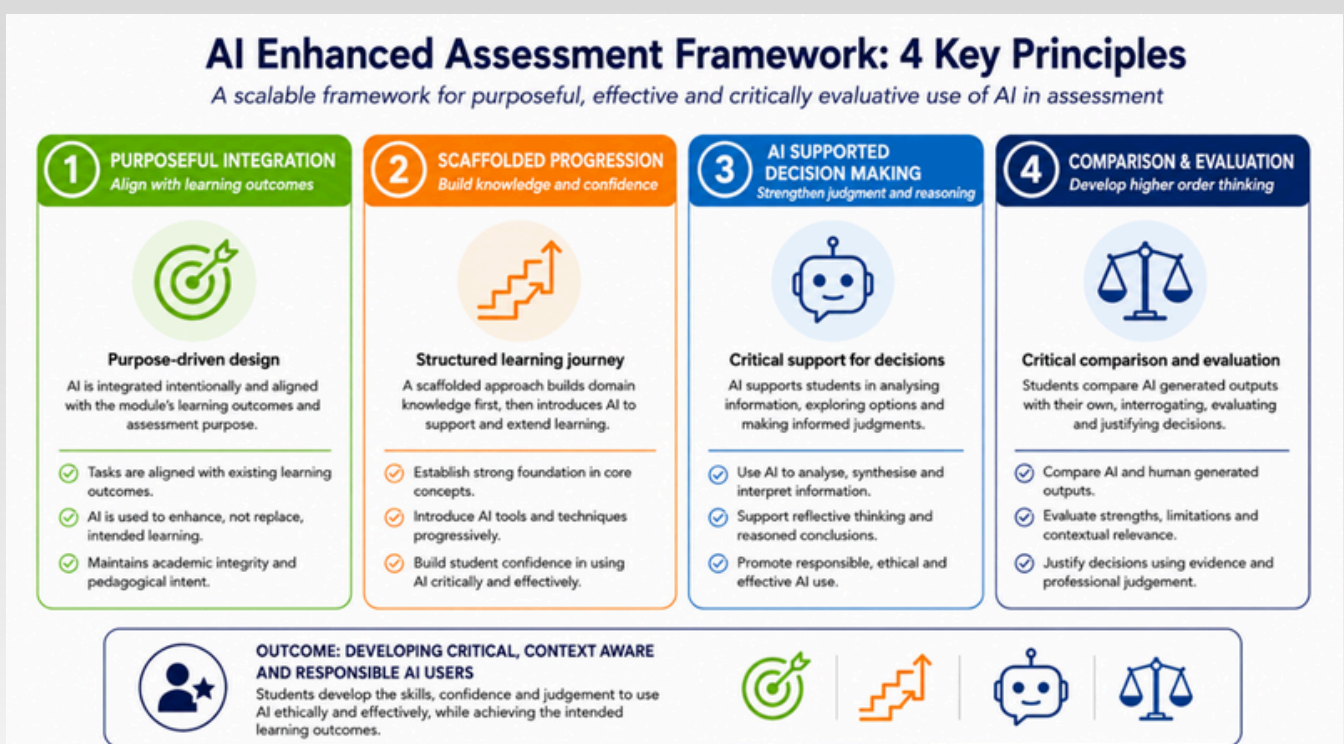
Outcomes and impact

From a quantitative perspective, there was a clear improvement in performance with the proportion of students achieving higher grades increasing compared to previous cohorts, with particular gains observed in assessment components requiring critical evaluation and justification. This aligns with emerging evidence that AI-supported assessment, when appropriately structured, can enhance student performance and engagement (Furze et al, 2024).

Qualitative feedback provided deeper insight into how students engaged with AI within the assessment. A dominant theme was an increased awareness of the relationship between prompt quality and output effectiveness. Students recognised that AI generated responses were highly dependent on the clarity and structure of their inputs, reinforcing the pedagogical emphasis on structured prompting. As one student noted, “what you get out is only as good as what you put in,” highlighting a developing understanding of AI as a tool requiring deliberate and skilled interaction.

Students also demonstrated an emerging critical perspective on AI. While many identified it as valuable for generating initial ideas or “jumping off points,” they consistently emphasised that it could not replace independent research or deeper engagement with subject knowledge.

Figure 1. AI Enhanced Assessment Framework: 4 Key Principles



One student observed that AI **“doesn’t have critical thinking... if your prompt isn’t well written then it’s not going to respond in the way you expect,”** indicating recognition of both the capabilities and limitations of AI generated outputs.

This reflects broader concerns that uncritical use of generative AI risks undermining deeper learning if not carefully managed (Sallai, 2024).

Engagement with the comparative element of the assessment appeared to be particularly impactful. By analysing differences between human generated and AI generated solutions, students were required to interrogate the validity, relevance and contextual appropriateness of each approach. This supported the development of metacognitive awareness and strengthened their ability to justify decisions within safety critical scenarios.

Students also identified practical limitations in the use of AI tools. Some reported that the process of refining prompts could be time intensive and, in certain cases, less effective than completing tasks manually. For example, one student commented that **“sometimes writing and rewriting a prompt takes longer and produces a worse result than just doing the work yourself.”**

This reflects a sophisticated understanding of when AI adds value and when traditional approaches remain more appropriate.

Despite these challenges, overall feedback indicated that the module was perceived as both engaging and highly relevant. Students reported increased confidence in using AI tools and recognised their growing importance within workplace contexts. Several noted that continued use of AI beyond the module had supported improved efficiency and productivity in day-to-day activities.

Taken together, the findings suggest that the intervention not only enhanced academic performance, but also supported the development of critical digital capability. Importantly, students did not simply learn to use AI, but they developed the ability to evaluate, challenge and apply it appropriately, which is an essential competency within safety critical and technically complex environments.

Conclusion and transferability

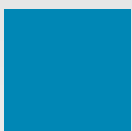
This case study demonstrates that AI can be effectively embedded within assessment to enhance both digital and analytical capability, while reinforcing the importance of critical judgement in safety critical contexts. By positioning AI as a tool for augmentation rather than substitution, the approach supports deeper engagement with complex problems and prepares students for evolving professional environments.

The model offers a scalable and transferable framework for other providers, particularly within technical disciplines where decision-making, risk management and professional accountability are central.

In contributing to ongoing discussions around AI in higher education, this case study highlights the potential for assessment to act as a key mechanism for developing future-ready graduates, who are capable of working effectively with technology while maintaining the critical judgement required in complex, real world contexts.

References

- Corbin, T et al (2025) ‘The wicked problem of AI and assessment’, *Assessment and Evaluation in Higher Education*.
- Freeman, J (2025) *Student Generative AI Survey 2025*. Oxford: HEPI
- Furze, L et al (2024) *The AI Assessment Scale (AIAS) in action: GenAI supported assessment*.
- Perkins, M, Roe, J and Furze, L (2024) *The AI Assessment Scale Revisited*.
- Sallai, D (2024) *Approach generative AI proactively or risk undermining learning*.



FE to HE training programme – supporting staff transition from further education to higher education

Chris Ridings, Heart of Worcestershire College

Overview and context

This case study outlines Heart of Worcestershire's higher education action research project designed to support further education (FE) lecturers transitioning into higher education (HE) teaching roles within a college-based higher education (CBHE) context. As FE colleges increasingly deliver HE programmes, lecturers are required to meet HE pedagogical, assessment, and quality assurance expectations while working within FE organisational structures. Existing research consistently highlights that FE lecturers often feel underprepared for HE delivery, reporting low confidence, limited access to HE-focused professional development, and uncertainty around academic identity and expectations. (Turner et al, 2015; Buckley and Husband, 2020).

Recognising this challenge, this project aimed to design, implement and evaluate a structured HE-focused continuing professional development (CPD) intervention to strengthen staff confidence, improve teaching, learning and assessment (TLA), and enhance student experience and outcomes across HE provisions delivered in FE settings.

Project aims and objectives

The central aim of the project was to improve the effectiveness and confidence of FE lecturers delivering or aspiring to deliver HE provision.

The project sought to:

- enhance staff understanding of HE pedagogical principles, level-appropriate TLA and assessment practices (Advance HE, 2023; QAA, 2018)
- increase lecturer confidence in HE delivery and academic identity (Turner et al, 2014)
- improve student satisfaction through enhanced teaching quality
- improve student outcomes, including retention, engagement and achievement at higher grades
- align staff development with Advance HE and organisational priorities for HE quality enhancement.



Work conducted and methodology

The project adopted a collaborative action research methodology, enabling iterative cycles of planning, action, observation and reflection (Nazari, 2022).

This approach was selected to ensure that the CPD provision was grounded in staff experience, responsive to emerging needs and directly linked to improvements in practice (Jiang, 2019).

Participants

Participants included a mixed cohort of established FE lecturers preparing to deliver HE provision, and FE PGCE trainee teachers aspiring to progress into HE teaching roles. Recruitment used purposive and snowball sampling to ensure relevance, while remaining manageable within the operational constraints of FE workloads (Naderifar et al, 2017).

CPD intervention

A structured programme of HE-focused CPD sessions was designed and delivered. These sessions focused on HE-level pedagogy and the distinction between FE and HE teaching cultures (Lea and Simmons, 2012); designing and delivering level-appropriate learning, teaching and assessment; supporting independent learning, critical thinking and academic skills; assessment literacy, feedback at HE level and managing academic standards; developing scholarly identity and confidence in HE practice (Buckley and Husband, 2020).

Due to FE workload pressures, CPD was delivered through blended formats, combining live sessions with recorded materials to maximise accessibility. Participants were encouraged to reflect on their practice, trial new approaches within their teaching and share experiences during the programme.

Data collection

Data was collected using CPD session evaluations and reflective feedback from participants; end-of-project staff surveys focused on confidence, preparedness and perceived impact; observations of teaching practice within FE and HE sessions; and student outcome data and satisfaction metrics, with comparisons to previous cohorts where available.

Ethical approval was secured, with participant anonymity maintained throughout the research.

Outcomes and impact

The project demonstrated clear positive impact across staff and student dimensions.

Increased staff confidence and professional identity

One of the most significant outcomes was a measurable improvement in staff confidence. Participants consistently reported feeling more assured in their understanding of HE expectations, pedagogy and assessment standards. Many described reduced feelings of impostor syndrome and greater confidence in identifying as HE practitioners (Turner et al, 2014; Wood, Farmer and Goodall, 2016).

Staff highlighted that targeted HE CPD, delivered before or during their transition into HE teaching, was particularly valuable. Rather than relying on legacy FE practices or informal learning, participants felt better equipped to teach at the appropriate academic level and justify pedagogical decisions aligned with HE standards.



Improved teaching, learning and assessment (TLA)

Teaching observations and staff reflections indicated clear improvements in TLA practice. Lecturers demonstrated stronger alignment between learning outcomes, teaching activities and assessment methods. There was increased emphasis on critical thinking, student autonomy and scholarly engagement within learning sessions.

Assessment design and feedback quality also improved. Staff reported greater confidence in applying HE marking criteria, supporting academic writing and delivering constructive feedback that promoted progression rather than compliance (Fernandes et al, 2023).

Enhanced student satisfaction

Student feedback indicated improved learning experiences, particularly around clarity of expectations, quality of feedback and teaching approaches. Students reported feeling better supported to engage with academic study while developing independence appropriate to HE-level learning. In a small sample size (two programme participants) student satisfaction increased in both participants units to 100% satisfaction from 96% and 92%.

Improved lecturer confidence and consistency in TLA practices contributed to more coherent and engaging learning environments (Latip et al, 2020), positively influencing overall student satisfaction.

Improved engagement, retention and achievement

Student engagement and retention data demonstrated improvement when compared with previous cohorts, particularly in early stages of HE programmes where transition challenges are most acute. Both sample participants saw their unit session attendance improve; Participant A from 87.3% in previous year to 94% and Participant B from 83.2% in previous year to 91.8%.

Improved clarity in assessment expectations and enhanced academic support were identified as contributing factors. Achievement data also showed a positive trend, with increased proportions of students achieving higher grades. High-grade measures were most positive with Participant A supporting 85.7% of their group in achieving distinction grade compared to 30% previous year. Participant B supported 44.4% of their group achieving merit grade or higher compared to just 14.3% in previous year.

This was linked to improved assessment literacy, clearer feedback and more effective alignment of teaching with HE learning outcomes (Fletcher-Wood and Zuccollo, 2020).



Organisational and strategic impact

Beyond immediate teaching and learning outcomes, the project delivered wider institutional benefits:

- Strengthened capacity for HE delivery within FE contexts.
- Improved staff morale, wellbeing, and sense of professional legitimacy.
- Enhanced alignment with Advance HE priorities for HE pedagogical quality (OfS, 2022).
- Contribution to institutional readiness for HE quality reviews and student outcome scrutiny.

By proactively supporting staff transitions rather than relying on reactive interventions, the institution demonstrated commitment to sustainable HE provision and staff development.

Conclusion and key learning

This case study demonstrates that targeted, HE-focused CPD delivered to FE lecturers has a tangible and measurable impact on staff confidence, teaching quality and student outcomes. The action research approach ensured that the CPD provision was meaningful, flexible and directly applicable to practice.

Key learning from the project includes:

- Transition from FE to HE requires structured pedagogical support, not assumed capability.
- Staff confidence is a critical driver of TLA quality and student success.
- HE-focused CPD delivered early in the transition process maximises impact.
- Improved staff confidence directly supports student satisfaction, retention and attainment.

This project provides a scalable model for FE colleges delivering HE, demonstrating how investment in staff development leads to demonstrable improvements in educational quality and outcomes.

References

- Advance HE, GuildHE and Universities UK (2023) Professional standards framework for teaching and supporting learning in higher education. York: Advance HE.
- Buckley, C and Husband, G (2020) 'Lecturer identities and perceptions of CPD for supporting learning and teaching in FE and HE in the UK', *International Journal of Management and Applied Research*, 7 (4): 432-453.
- Fernandes, S, Araújo, A M, Miguel, I and Abelha, M (2023) 'Teacher professional development in higher education: the impact of pedagogical training perceived by teachers', *Education Sciences*, 13 (3): 309.
- Fletcher-Wood, H and Zuccollo, J (2020) *The effects of high-quality professional development on teachers and students*. London: Education Policy Institute.
- Jiang, L J (2019) 'Conducting collaborative action research: challenges and coping strategies', in Tsang, K, Liu, D and Hong, Y (eds) *Challenges and Opportunities in Qualitative Research*. Singapore: Springer.
- Latip, M S A, Newaz, F T and Ramasamy, R (2020) 'Students' perception of lecturers' competency and the effect on institution loyalty', *Asian Journal of University Education*, 16 (2).
- Lea, J and Simmons, J (2012) 'Higher education in further education: capturing and promoting HEness', *Research in Post-compulsory Education*, 17 (2): 179-193. Available at: doi.org/10.1080/13596748.2012.673888
- Naderifar, M, Goli, H and Ghaljaie, F (2017) 'Snowball sampling: a purposeful method of sampling in qualitative research', *Strides in Development of Medical Education*, 14 (3): e67670. Available at: doi.org/10.5812/sdme.67670
- Nazari, M (2022) 'Action research and teacher identity construction', *RELC Journal*, 53 (3): 672-685.
- Office for Students (2022) *Regulatory advice 22: guidance on the Teaching Excellence Framework (TEF) 2023*. Bristol: Office for Students.
- Quality Assurance Agency for Higher Education (2018) *UK Quality Code: Advice and Guidance – Learning and Teaching*. Gloucester: Quality Assurance Agency for Higher Education.
- Turner, R, Brown, T, Edwards-Jones, A, Hughes, J, Banks, A, Bardsley, J, Bryan, Y, Gray, C, Isaac, A, Mann, J, Mason, M, McKenzie, L, Osborn, J, Rowe, M, Stone, M and Wilkinson, R (2014) 'Narrative explorations into the professional development of lecturers teaching higher education in English further education colleges', *Professional Development in Education*, 41 (3): 546-562. Available at: doi.org/10.1080/19415257.2014.919340
- Wood, C, Farmer, M D and Goodall, D (2016) 'Changing professional identity in the transition from practitioner to lecturer in higher education: an interpretive phenomenological analysis', *Research in Post-Compulsory Education*, 21 (3): 229-245. Available at: eric.ed.gov/?id=EJ1110255 [accessed 18 May 2026].



Developing future-ready graduates through creative industry postgraduate curriculum design

Emily Bettison, Academy of Contemporary Music

Structured around five core principles, this case study explores the Master's in Cultural and Creative Industries (MCCI) at the Academy of Contemporary Music (AC[M]). In response to technological disruption, portfolio careers and interdisciplinary practice reshaping work across the creative sector, this qualification was designed to create future-ready graduates and supports resilience, adaptability and lifelong learning.

Principle one: prepare graduates to continuously adapt and redefine their professional identities

The course was designed as a flexible, student-led curriculum. Rather than prescribing a singular pathway, it comprises four, contextually agnostic, modules that provide a framework for students to navigate based on their interests within the creative industries.

This approach encourages students to tailor their learning, consequently 'learning to learn', preparing them as future-ready professionals who can adapt and thrive as industries change.

Collectively, the modules ensure that identity, research, practice and community are developed across academic, professional and personal contexts. Thus, students simultaneously develop as researchers, practitioners and professionals embedded within evolving industry ecosystems.

"The... course reshaped the way I understand and navigate the creative industries. Its interdisciplinary focus and emphasis on critical, adaptable thinking continue to influence how I approach new roles and environments..." - Briggs

The first module, Professional Practice Frameworks, enables students to critically define their professional identity, skills and future trajectory through engagement with a specialist self-selected professional framework. Through activities designed to facilitate reflective practice and early industry engagement, students create and undertake a personalised approach to CPD ensuring adaptability and versatility.

“[It] was challenging because it pushed me to reflect deeply on myself, but it ultimately improved my confidence and sense of identity and reframed the way I thought about my experience.” - Peace

Students then study Applied Research, Ideas into Action, and Making Connections and Building a Community modules. Through module design, students develop and engage professional networks, position their work within meaningful industry and society contexts and learn to navigate complex, multi-stakeholder environments. Research outputs are therefore critically robust, actionable and professionally viable. Furthermore, students establish a transferable skillset, knowledge and practice that closely mirrors emerging practices in the creative industries.

Principle two: embed interdisciplinary professional and peer collaboration throughout all learning experiences

Rather than separating students by discipline, the core modules are delivered through lectures, workshops and project sessions which combine students from all creative industry disciplines. This encourages interdisciplinary learning and independent development. Students are introduced to broad frameworks that they apply to their disciplinary practice while benefiting from peer collaboration and knowledge exchange. Feedback consistently highlights the value of learning beyond disciplinary boundaries.

“... The experience has strengthened both my technical skills and my ability to collaborate within the wider creative community, ultimately providing me with the confidence and skill set to pursue a career within the industry.” - Webster-Coles

“...A fantastic opportunity to network with like-minded people... across all the creative sectors.” - Reeley

Principle three: redefine the role of the ‘supervisor’

Within the Applied Research module, AC[M] recently piloted a move away from the traditional sole dissertation supervisor model. Students are now allocated both an academic supervisor and a mentor who provides discipline-specific knowledge and models the professional support that students will experience as industry professionals.

This approach prepares students to navigate the relationships and networks needed to thrive in the creative industries. Lecturers and mentors empower students, fostering agency to identify solutions and become the ‘master’ of their own specialism.





While beneficial, this approach presents a logistical challenge as mentors must be allocated each year according to student interests as far as possible.

“...I am incredibly grateful for the guidance, support and opportunities provided... which have had a lasting impact on both my career and personal development.” - Farrant

Principle four: acknowledge and build a framework to support shifting professional identities

A key challenge for postgraduate education is supporting students to transition from undergraduate study, which requires increased independent learning. At AC[M] many postgraduate students progress directly through an integrated master's programme. This means that the boundary between undergraduate and postgraduate study is less clearly defined.

To address this, AC[M] has developed an enhanced re-induction process prior to the postgraduate year. This focuses on independent learning, professional identity and encouraging self-directed research practice. The first module further supports this transition as discussed above

“My master's at ACM became more than an extension of my undergrad, it was more of a journey of self-discovery.” - Peace

Across the four postgraduate modules, students undertake further transformation, from a 'student' identity to creative industry professional. Graduates leave with academic qualifications, established networks, stakeholders and project concepts that have been developed and tested.

Principle five: ensure sustained impact through real-world assessment design

All module assessments and learning outcomes require students to situate their work within a relevant industry context. For example, students must justify the real-world impact of their chosen Applied Research project. Many students continue to develop these projects once they graduate and the sustained impact of the course is evidenced through alumni feedback regarding subsequent career development and professional success.

“...Little did I know, a year and a half later, I would find myself touring schools with that very project. What began as a tryout, supported by minimal funds, has blossomed into a fulfilling endeavor...” - Lazakis

“The impact the course had on my career has been incredible, learning the necessary team building skills alongside the knowledge in my chosen industry sector has made me better prepared for the future.” - Ions

“[The course] enabled me to build my fully inclusive drum tuition business...as well as working with Surrey County Council on projects like their Up! Orchestra and World in Music.” - Purdie

Future plans

During the 2026-27 academic year, AC[M] is expanding the specialism options and resources available to students to supplement their core modules. This includes specific educational content designed to prepare students for a career in their chosen field while still equipping them with an understanding of the wider creative industry ecosystem that they will operate within.

Gamified knowledge sprints: reimagining the educator as real-time learning diagnostician

Itunuoluwa A Adeoye and Mariya A Omoniyi, Elizabeth School of London

Introduction and context

Teaching in higher education has long been organised around the idea that the educator's primary function is to deliver content. However, this assumption is increasingly being questioned, both in theory and in practice, as understandings of how learning takes place have evolved. In Small, Specialist and Independent (SSI) and College-Based Higher Education (CBHE) settings, cohorts are often composed of working adults. As a result, the gap between what an educator plans to teach and what learners can absorb can be significant. Misconceptions identified only at the summative stage result in underperformance, as students have had no opportunity to correct their understanding.

This case study describes how we responded to that problem at Elizabeth School of London, within a Business and Management programme for adult learners. Over the 2023 to 2024 academic year, we introduced 'Knowledge Sprints'. These were brief, anonymous, scenario-based quizzes delivered mid-session through Quizizz or Kahoot. The aim was not primarily to test students but to generate real-time evidence of where understanding was limited, so that teaching could respond immediately rather than retrospectively.

The initiative

The cohort comprised 41 working adult learners attending weekly two-hour sessions, typically in the late afternoon. Sustaining engagement with students arriving from full working days presented a consistent challenge. Knowledge Sprints were introduced as a structured mid-session activity lasting around 10 minutes. Each sprint presented three to five scenario-based questions connecting theoretical frameworks to workplace situations drawn from learners' own professional contexts.

Quizizz and Kahoot were selected because they are freely available and show only an overall class result rather than identifying individual responses. This anonymity was a deliberate design choice as many adult learners are cautious about revealing gaps in knowledge in front of colleagues (Knowles et al, 2014). The sprints did not add time to the curriculum. Instead, they replaced review moments in session plans, giving those moments a clearer purpose and a measurable output. They enabled educators to see, within minutes, which concepts had been understood, which had not, and to redirect the remaining session accordingly.



Why this approach

The Knowledge Sprint model draws on a well-established body of research. Studies show that actively reconstructing knowledge from memory produces stronger long-term retention than re-reading or passive review (Roediger and Butler, 2011; Adesope et al, 2017). Using scenario-based questions rather than simple recall items developed this further. These questions required students to apply theoretical frameworks to unfamiliar situations, thereby engaging higher-order cognitive processes articulated in Bloom's taxonomy (Adams, 2015). Wiliam (2018) study on formative assessment argues that assessment practices embedded within ongoing instruction produce substantial gains in student learning. Real-time visualisation of response patterns gave educators immediate feedback.

The design is further underpinned by andragogical theory. Wlodkowski and Ginsberg (2017) argue that adult learners engage most productively when they feel psychologically safe and when learning connects to their lived experience. The anonymity of the platform addressed the safety dimension, while the scenario-based questions grounded abstract theory in the kinds of workplace decisions students encountered daily. These design choices reflected a deliberate effort to align the intervention with the existing evidence on adult learning.

Impact on students and educators

A major impact of the design was seen in student participation. Before the introduction of the sprints, only 42% of students actively engaged with in-class formative activities. By the end of the year, that figure had risen to 97%. Student outcomes further improved alongside participation. The cohort average module grade rose from 61% to 68% and pass rates increased from 78% to 94%. Findings revealed that 37% of students incorporated the scenario formats modelled during sprints into their written coursework. Student feedback reflected that of the 41 students who responded, 89% agreed that the sprints had been valuable. One student put it in terms that many others echoed:

"I realised what I didn't know, which helped me understand more and complete the assignment".



The impact on educators was also noteworthy. Access to real-time data on students' comprehension reshaped our experience of teaching. Instead of proceeding with a fixed sequence of activities, we were able to identify gaps and address them immediately.

What this means for the educator of 2040

Increasingly, conversations about the future of teaching in higher education focus on digital technology. This case study, however, suggests that its impact depends less on the technology itself and more on the pedagogical orientation that accompanies its use. In our context, the priority was real-time insight into students' understanding so teaching could be adjusted immediately, with Quizizz and Kahoot as convenient tools. For SSI and CBHE providers particularly, this matters. Large-scale learning analytics systems require institutional resources that are often difficult to develop and maintain in such settings.

The Knowledge Sprint model requires none of these. As Holmes et al (2019) and Luckin et al (2016) have both argued, the educator of the near future will need to be skilled not just in using digital tools but in interpreting the data those tools produce and making responsive decisions on that basis. This is a capacity that can be developed now, with the tools already available, as evidenced from this case study.



Conclusion

This study has demonstrated that a simple, feedback-oriented intervention can lead to a substantial shift in practice for those teaching working adult learners.

The Knowledge Sprint model gave us a way of teaching that felt more honest about uncertainty and more responsive to what learners needed. Student engagement and performance improved, and students began to take ownership of their own knowledge gaps in ways that carried through into their assessed work.

This case study concludes that gamified quizzes, when integrated into a thoughtful pedagogical approach, can support meaningful improvements in engagement and learning. It argues that the real priority is a shift from teaching as delivery to teaching as diagnosis. This shift is both necessary and achievable using tools and principles already within reach, and it is one that educators of 2040 will need to embrace.

References

- Adams, N E (2015) 'Bloom's taxonomy of cognitive learning objectives', *Journal of the Medical Library Association*, 103 (3): 152-153.
- Adesope, O O, Trevisan, D A and Sundararajan, N (2017) 'Rethinking the use of tests: a meta-analysis of practice testing', *Review of Educational Research*, 87 (3): 659-701.
- Holmes, W, Bialik, M and Fadel, C (2019) *Artificial intelligence in education: promises and implications for teaching and learning*. Boston, MA: Center for Curriculum Redesign.
- Knowles, M S, Holton III, E F and Swanson, R A (2014) *The adult learner: the definitive classic in adult education and human resource development*. Abingdon: Routledge.
- Luckin, R, Holmes, W and Forcier, L B (2018) *An argument for AI in education*. London: UCL Knowledge Lab.
- Roediger, H L and Butler, A C (2011) 'The critical role of retrieval practice in long-term retention', *Trends in Cognitive Sciences*, 15 (1): 20-27.
- William, D (2018) *Embedded formative assessment*. 2nd edn. Bloomington, IN: Solution Tree Press.
- Wlodkowski, R J and Ginsberg, M B (2017) *Enhancing adult motivation to learn: a comprehensive guide for teaching all adults*. Hoboken, NJ: John Wiley and Sons.

Triadic Socratic Learning: structuring critical AI engagement in engineering education

Dr James Atuonwu, New Model Institute for Technology and Engineering (NMITE)

Context and challenge

The rapid integration of generative AI into engineering education has transformed how students access knowledge, solve problems and construct explanations. While these tools offer substantial benefits, they also introduce a critical educational challenge: students may rely on AI-generated reasoning without interrogating its assumptions, limitations, or applicability. Research in human–automation interaction and cognitive offloading suggests that learners may defer to algorithmic outputs even when flawed, raising concerns about the development of independent reasoning and judgement.

This creates a fundamental tension in engineering education. Professional competence depends not only on arriving at correct answers, but on the ability to reason under uncertainty, justify modelling assumptions and interpret system behaviour. In an AI-mediated learning environment, the central question is therefore not whether AI should be used, but how it can be integrated without displacing students' capacity to 'know for themselves' – that is, to construct, evaluate and own their understanding rather than defer to external authority.

This case study presents Triadic Socratic Learning (TSL), a structured teaching approach designed to address this challenge by positioning AI as an object of critique within a broader framework of experiential learning, collaborative dialogue and reflective inquiry.

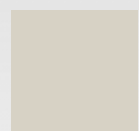
Approach and implementation

TSL was implemented in a Level 4 Thermofluids Engineering module within an integrated engineering programme. The intervention replaced a conventional laboratory exercise and was delivered over three sessions (approximately six contact hours). Students worked in teams of four to six, engaging with a low-cost Stirling heat engine as the experimental artefact.

While the core mechanical structure was pre-fabricated, students were responsible for system setup, sensor connection, preparation of the heat source, experimental configuration and data collection. The emphasis was placed not on fabrication complexity, but on disciplined observation, measurement and interpretation of system behaviour.

The learning sequence was explicitly structured into three interconnected phases:

- 1. Experimental inquiry (build and test):** Students engaged directly with the physical system, observing dynamic behaviour and collecting data. The focus was on grounding reasoning in empirical evidence rather than applying pre-existing formulas.
- 2. AI-mediated team dialogue:** Students were permitted to use AI tools during structured discussions. However, AI was deliberately framed as a contestable interlocutor rather than an authoritative source. Students formulated targeted prompts, interrogated AI-generated explanations and evaluated these against experimental observations, identifying assumptions, omissions and inconsistencies.
- 3. Teacher-facilitated Socratic reflection:** The instructor guided structured questioning, probing modelling assumptions, challenging reasoning and requiring students to articulate their understanding in first-person terms. This phase ensured that collaborative dialogue culminated in individual conceptual ownership.



Across these phases, inquiry was scaffolded through nine epistemic dimensions organised into three triads:

- Physical grounding – establishing disciplined physical reasoning through system definition, dynamic behaviour and non-ideal performance
- Engineering judgement – developing modelling awareness, design reasoning and decision-making under uncertainty
- Epistemic agency – ensuring students critically interrogate AI outputs, transfer understanding across contexts and articulate personal understanding

These dimensions were operationalised through structured prompts guiding students from observation to explanation and from explanation to evaluation. Rather than treating reflection as generic or open-ended, TSL provides a structured epistemic architecture for disciplined inquiry.

Impact and observations

Qualitative classroom observations indicate several important shifts in student behaviour and engagement.

First, students moved from procedural description to causal reasoning. Early observations tended to describe what the system did (eg changes in speed or temperature). With structured prompting, students increasingly explained why these behaviours occurred, linking temperature gradients, pressure differentials and mechanical output. Divergences between theoretical expectations and observed behaviour became productive points of inquiry rather than errors to be corrected.

Second, AI tools became a catalyst for interrogation rather than a source of authority. Students identified oversimplifications in AI-generated explanations, particularly where idealised models failed to account for experimental losses. AI outputs were compared with empirical data, and prompts were refined iteratively. Rather than reducing discussion, AI often intensified it by providing material for critique and debate.



Third, the structured reflection phase supported the transition from distributed team dialogue to individual articulation. Students were required to express their understanding in first-person terms, focusing on system behaviour, modelling assumptions and limitations. This ensured that collaborative reasoning translated into personal conceptual ownership. Notably, quieter students often contributed more actively during AI interrogation and reflection stages.

Finally, students demonstrated increased awareness of modelling assumptions, uncertainty and system limits. By explicitly confronting non-ideal behaviour, they developed a more nuanced understanding of the relationship between theory and practice.

Transferability and key takeaways

TSL provides a transferable framework for integrating AI into engineering education without diminishing human judgement. Its core contribution lies not in the specific artefact used, but in the structured integration of experiential learning, AI interrogation and reflective synthesis.

Key elements that can be adopted by other educators include:

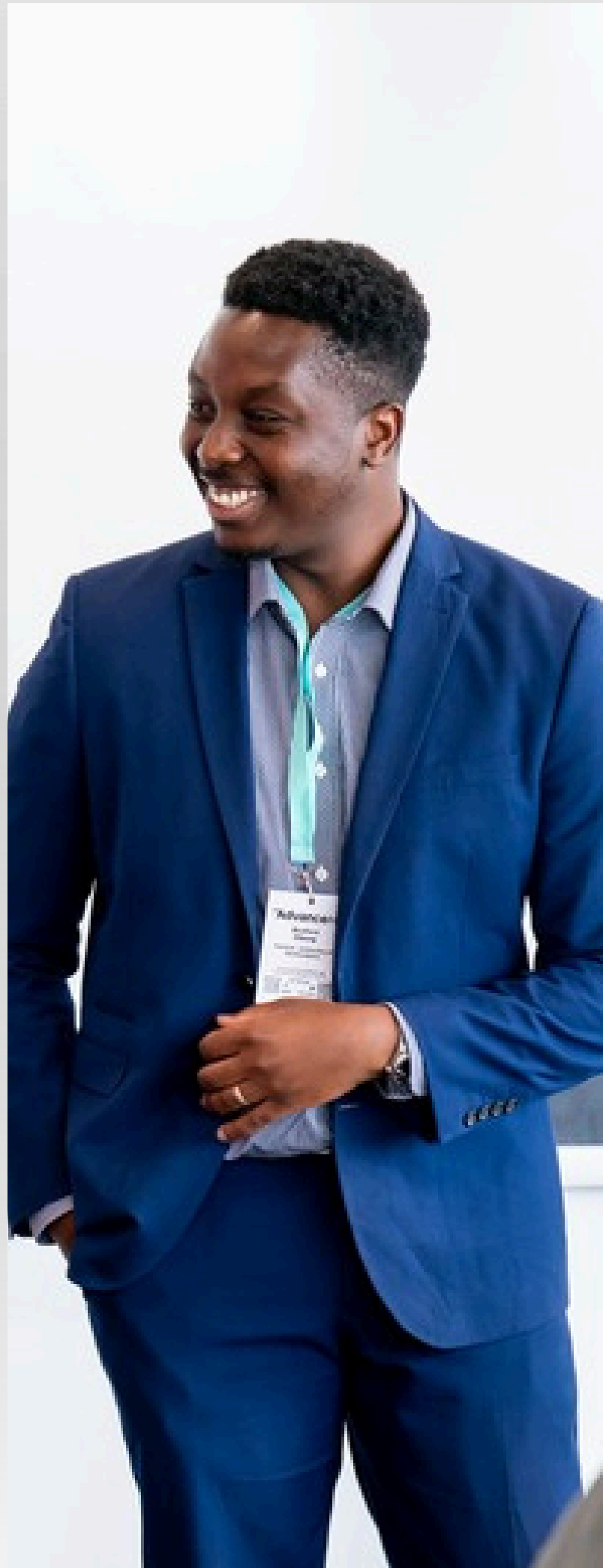
- structuring learning into experiential, dialogic and reflective phases
- positioning AI as a tool for interrogation rather than authority
- using scaffolded epistemic prompts to guide reasoning
- ensuring that collaborative activity culminates in individual articulation
- embedding reflection within a clear epistemic structure rather than treating it as generic activity.

The framework is adaptable across engineering domains involving system behaviour, modelling uncertainty, design trade-offs, or sustainability challenges.

Conclusion

Triadic Socratic Learning offers a structured response to a defining challenge in contemporary engineering education: integrating powerful AI tools without eroding independent reasoning and judgement. By organising inquiry across nine epistemic dimensions within three triads, the framework ensures that experimentation, dialogue and AI engagement culminate in individual conceptual ownership.

More fundamentally, TSL demonstrates that AI integration need not shift cognitive authority away from the learner. With deliberate pedagogical design, AI can instead become a stimulus for deeper reasoning, enabling students to question, justify and ultimately know for themselves in an increasingly AI-mediated world.





Facial analysis and classification of engineering students (FACES)

John Balasuriya, OMNES Education London School

Introduction

Artificial intelligence (AI) is rapidly reshaping our modern world, transforming all industries from astronomy to architecture. At the heart of these AI advances is deep learning (LeCun et al, 2015), a very powerful and complex technology. However, the theory and intuition underpinning deep learning can be inaccessible to students encountering this level of complexity for the first time.

The Facial Analysis and Classification of Engineering Students (FACES) project aims to bridge this gap by offering an engaging, hands-on experience in deep learning in which students competitively build automated face recognition systems to classify each other's faces during a three-month project.

Why face recognition?

Automated face recognition serves as an excellent introduction to deep learning for several technical and cognitive reasons.

- Faces are among the most familiar and engaging visual stimuli for humans. Approximately 30% of the human brain is dedicated to vision, with specific neural regions (Fusiform Face Area) specialised solely for the recognition of faces (Kanwisher et al, 1997)
- The natural human sensitivity to facial patterns makes this project immediately intuitive and relatable.
- Automated face recognition inherently involves many of the core challenges of deep learning: complex pattern recognition, feature extraction, generalisation across variations (such as lighting, pose, and expression) and model robustness (Guo and Zhang, 2019)
- FACES provides a hands-on environment for students to explore key topics such as convolutional neural networks (CNNs), data augmentation, overfitting and evaluation metrics.
- The visual and interactive nature of automated face recognition systems offers immediate and highly motivating feedback. Students immediately know whether their models perform well or poorly, encouraging iterative experimentation and critical analysis. Observing their FACES system misclassify or successfully identify a face makes the learning experience more engaging, memorable and therefore more effective.
- Completely objective evaluation is possible in this project. The face recognition rate of the students' FACES systems on previously unseen test data is the students' AI project mark.
- Automated face recognition has significant real-world relevance, underpinning technologies in security, social media and human-computer interaction. Introducing students to this field early helps ground their education in practical, industry-relevant skills, which can be discussed in future job interviews.

By combining cognitive resonance, technical depth, immediate feedback and real-world relevance, FACES forms an ideal gateway into deep learning.

Methodology

Building FACES systems begins with students contributing images of their own faces. Students provide 10 images of themselves, often with assistance from the university photographer. Those who do not wish to contribute facial images, including for religious or personal reasons, can decline while still participating fully in the FACES project.

Each student's images are divided into three subsets: Training (five images each), Validation (one image) and Test (four images) (Hastie et al, 2009). After combining this data, only Training and Validation datasets are provided to the students. The university's learning management system is used to distribute Training and Validation images back to the students. Meanwhile the Test dataset is withheld until the FACES project demo at the end of the semester.

During the semester, students competitively conduct independent research and develop their own deep learning systems to recognise their peers' faces using only the provided Training and Validation datasets. Theoretical guidance underpinning FACES is delivered during the semester's AI module lectures. Office hours are also scheduled to provide students with hands-on individual mentoring related to the FACES project.

The culmination of FACES at the end of the semester is calculating the recognition rate of students' systems using the withheld Test dataset. We have hundreds of Test images to process for each system, and our testing script dynamically displays the current calculated face recognition rate. This results in highly interactive in-class AI demos with cheering and applause as the systems attempt to recognise student faces.

Results

In total, over the years, approximately 12,000 face images of engineering students have been contributed to the FACES project with a total file size of almost 20 gigabytes. The total FACES project dataset is therefore a substantial educational face recognition dataset. Performance statistics from all FACES systems have been collected and archived, creating valuable data on face recognition using deep learning.

"I'd like to give a special thank you to Dr Balasuriya, who genuinely sparked my passion for research in AI, and computer vision in particular. He was always there for us, patient with every question and never making any of us feel like we were asking too much. His lessons on the latest developments in the field really opened my eyes to what's possible, and I left his class excited to keep exploring on my own." – Victor Bondain, student at ECE Lyon

FACES PROJECT · OMNES Education London School
Facial Analysis and Classification of Engineering Students · Advance HE Innovative Practice Grant 2026



For students, the impact is immediate and personal. They are not training models on distant benchmark data, but on a dataset they helped create and in which they themselves appear. This gives the assessment emotional resonance as well as technical value.

FACES demystifies AI and deep learning by focusing on practical application, transforming abstract theory into something tangible. Rather than passively absorbing theory, students actively engage with the application of technology, developing both technical skills and critical thinking.

Discussion

In traditional computer science projects, there is a high risk of students generating code using AI chatbots or copying results from their peers or previous cohorts. Because each semester we have a different cohort (and therefore a different dataset of faces to recognise), this FACES project creates a continuously changing assessment environment that is resistant to recycling old solutions and requires genuine student understanding and contribution.

Plagiarism is simple to identify in FACES. The trained weights of a deep learning network are highly specific to each system. Two independently trained systems would not have identical weights unless one model checkpoint had been copied from another. Another advantage is that marking these projects is completely objective. The performance of FACES systems (the systems' face recognition rate) on previously hidden Test data is the engineering students' project grade.

FACES reimagines how we assess and encourage student learning in an age increasingly shaped by generative AI tools. We hope this project inspires similar problem-based approaches across higher education institutions with lecturers acting as guides, designing rich learning experiences for students.



References

- Guo, G and Zhang, N (2019) 'A survey on deep learning based face recognition', *Computer Vision and Image Understanding*, 189.
- Hastie, T, Tibshirani, R and Friedman, J (2009) *The elements of statistical learning: data mining, inference, and prediction*. 2nd edn. New York: Springer.
- Kanwisher, N, McDermott, J and Chun, M M (1997) 'The fusiform face area: a module in human extrastriate cortex specialized for face perception', *The Journal of Neuroscience*, 17 (11).
- LeCun, Y, Bengio, Y and Hinton, G (2015) 'Deep learning', *Nature*, 521: 436-444.

Bridging heritage and innovation in electrical design

John Lewis and Heidi Ludlow, Bridgend College

Gareth Jones, St Fagans National Museum of History Wales

Background information

Fostering collaborative partnerships between Bridgend College and St Fagans National Museum of History Wales enabled us to create a fully immersive learning experience. The project, titled Bridging Heritage and Innovation, was designed to address a persistent challenge in higher education (HE) and the construction trades: the disconnect between theoretical classroom simulations and the nuanced, high-stakes realities of the built environment.

By engaging HNC Building Services learners in the retrospective electrical and lighting design of historic and modern structures – specifically the Vulcan Pub and the Gwaith Du multi-functional centre – we have moved beyond ‘standard fit’ pedagogy. Over a two-year period, this initiative has not only enriched the curriculum but has also sparked a wider movement to address the heritage skills gap in Wales, involving key stakeholders such as the National Trust and the National Museum of Wales.

Moving beyond the ‘modernfit’

In contemporary electrical training, learners are frequently taught within the ‘restricted’ environments of modern builds. These scenarios are often uniform, predictable and permit a level of rote repetition that does not reflect the diversity of the UK’s existing housing and commercial stock.

The rationale for this project was born from a desire to foster strategic implementation over simple technical application. Welsh culture and heritage are integral to the nation’s modern identity, yet engineering education often overlooks the unique constraints of historic architecture. By placing learners at St Fagans – arguably the most significant display of Welsh heritage – we sought to reconcile 21st-century safety and efficiency standards with the idiosyncratic architectural constraints of the 19th and 20th centuries.

This ‘historical slant’ was designed to stretch the imagination and technical ability of the workforce, ensuring they are prepared for the non-standard installations common in the modern construction landscape.

Implementation and methodology: the St Fagans partnership

The project was facilitated by an initial approach to the museum’s website, which led to a fruitful collaboration with Gareth Jones, the Museum’s Engineering Manager. His expertise and openness provided our learners with an incredible facilitator and an authentic professional environment.



Phase 1: The Vulcan Pub (retrospective heritage design)

The first design project focused on the Vulcan Pub, a landmark building originally located in Adamstown, Cardiff, which has been meticulously reconstructed on-site at St Fagans.

- The site visit: learners met with Gareth Jones for an extensive tour. Moving away from digital simulations, they engaged in a physical survey using traditional tools – notepads, pens and calculators – to work out power and circuitry requirements from first principles.
- Technical challenge: although the utility services were already installed, learners were tasked with a retrospective design. They had to ensure that their proposals for power and lighting met current BS7671 (Wiring Regulations) and CIBSE lighting codes, while remaining sympathetic to the pub's historical aesthetic. This forced a reconciliation between modern safety requirements and the physical limitations of a heritage structure.

Phase 2: Gwaith Du (the modern multi-function challenge)

To contrast the heritage-specific work of the Vulcan, the project moved to Gwaith Du, a modern, multi-functional building at the museum that incorporates galleries, workshops and a café.

- Creative complexity: this site presented different challenges, requiring designs that could adapt to diverse usage types within a single footprint.
- Outcome: learners demonstrated an ability to pivot their technical skills from historical preservation to modern versatility, cementing the idea that a truly future-ready workforce must be as comfortable with the old as they are with the new.

“I found the trip particularly beneficial in relation to my current assignment, as it helped me see first-hand the challenges of installing and maintaining electrical services within older buildings while still meeting modern standards. Being able to observe these systems in practice has made it much easier to relate theory to real world applications.” (Kristian Rose)



Impact on learners and pedagogical evolution

The impact on the HNC Building Services cohort has been transformative. By stepping outside the classroom, learners gained a profound understanding of the evolution of electrical engineering.

Key impacts include:

- **Analytical skill development:** the project moved learners away from ‘painting by numbers’ design. They were required to think strategically about how buildings have changed and – crucially – how they will need to adapt in the future to accommodate green technologies within old frameworks.
- **Real-world resilience:** the complexities of the St Fagans structures acted as a pedagogical tool to build resilience. Learners found that ‘real-life’ scenarios are rarely as tidy as textbook examples, preparing them for the diverse challenges of the construction industry.
- **Enhanced employability:** graduates of this programme possess a niche understanding of heritage constraints, a skill set that is increasingly in demand as the UK focuses on retrofitting and maintaining its existing built environment.

Organisational legacy and future scoping

What began as a single-module design project has evolved into a cross-departmental culture of collaboration.

- **Interdisciplinary sharing:** the success of the electrical design cohort led to other departments, such as Plumbing, visiting the museum to study historical construction techniques and building developments.

- **Addressing the skills gap:** during on-site discussions, a significant gap in heritage building skills was identified within the local workforce. Consequently, our organisation is now leading a collaborative effort with the National Museum of Wales, the National Trust, and St Giles Trust to develop specific training pathways that fulfil these heritage needs.
- **Organisational resource sharing:** the links formed with Gareth Jones and the St Fagans team have created a permanent channel for resource and information sharing, enriching the institutional knowledge of our staff.

“It helped me develop my understanding of working within a heritage environment and strengthened my ability to work as part of a team. I also improved my communication skills and gained a better appreciation of the importance of planning, organisation, and attention to detail in a real-world setting.” (Jack Payne)



Conclusion: a blueprint for SSI and CBHE providers

The Bridging Heritage and Innovation project serves as a scalable blueprint for how HE providers can integrate cultural heritage into technical engineering curricula. By using the National Folk Museum as a living laboratory, we have successfully challenged our learners to move beyond rote repetition toward high-level strategic problem-solving.

As we look toward the remainder of 2026, the project continues to prove that the most effective way to prepare a workforce for the future is to give them a deep, practical understanding of the past. This initiative ensures that our learners are not just competent electricians, but thoughtful designers capable of navigating the complexities of the modern construction landscape.

References

Biggs, J and Tang, C (2011) Teaching for quality learning at university. Columbus, OH : McGraw-Hill Education.

BSI (2022)The Institute of Engineering Technology: Requirements for electrical installations BS7671 Amendment 2:2022. London: IET and BSI.

CIBSE (2014) LG13: Lighting for museums and art galleries. London: Chartered Institution of Building Services Engineers.

Historic England (2018) Energy efficiency and historic buildings: electrical rewiring. Swindon: Historic England.

Institution of Engineering and Technology (2022) BS 7671:2018+A2:2022 Requirements for Electrical Installations (IET Wiring Regulations 18th Edition). London: IET.

Lave, J and Wenger, E (1991) Situated learning: legitimate peripheral participation. Cambridge: Cambridge University Press.

The Society for the Protection of Ancient Buildings(SPAB) (nd) TechnicalAdvice Note: Services in Historic Buildings. London: SPAB.



Building inclusive, technology-enabled assessment practices for multilingual adult learners in SSI/CBHE

Mariya A Omoniyi and Itunuoluwa A Adeoye, Elizabeth School of London

Introduction

Higher education in the UK has become increasingly diverse, with notable growth in enrolments from learners whose first language is not English, a shift particularly pronounced within SSI/CBHE settings (Gravells and Simpson, 2014). While such learners bring significant professional experience, they face distinctive challenges: navigating academic language conventions, decoding assessment requirements and operating within digital environments that presuppose particular literacies (Cummins, 2000; Lillis and Scott, 2007).

Assessment systems can inadvertently disadvantage non-native English speakers when linguistic demands are not made explicit and when support is positioned as remedial rather than integral (Shay, 2008; Wingate, 2015). The problem lies not in the learner but in assessment environments that conflate academic English proficiency with intellectual capability (Hockings, 2010). This case study presents an initiative at Elizabeth School of London (ESL) to address these challenges through a phased, technology-enabled redesign of curriculum, assessment and staff development practices.

Context and rationale

SSI/CBHE providers serve cohorts that differ substantially from mainstream universities; they are typically more diverse in age, linguistic background and professional experience while operating with leaner resource bases (Parry et al, 2012). ESL's student population reflects this profile: predominantly adult learners in employment, many from African, Asian, or Eastern European linguistic backgrounds, enrolled in undergraduate business programmes.





Programme-level monitoring identified a cluster of concerns: inconsistent assessment performance across cohorts; a high frequency of student clarification requests about assessment tasks; and staff uncertainty about fair and consistent marking of work produced in a second language. These indicators reflect what Wingate (2015) identifies as a transparency deficit, a gap between staff assumptions about what assessments require and students' actual understanding of those requirements. For multilingual learners, this gap is widened by the implicit nature of academic convention, which is rarely made legible through standard assessment briefs alone.

Theoretical framework

The initiative draws on three intersecting frameworks. The academic literacies model (Lea and Street, 1998) conceptualises writing and assessment engagement as socially situated, discipline-specific practices rather than generic transferable skills. This supports embedding literacy development within subject modules rather than relegating it to separate provision (Wingate and Tribble, 2012).

Inclusive pedagogy (Hockings, 2010; Rose and Meyer, 2002) frames inclusion as the proactive design of learning environments that anticipate the full range of learner diversity, positioning students' linguistic and cultural resources as assets rather than deficits (Cummins, 2015).

Formative assessment theory (Black and Wiliam, 1998; Nicol and Macfarlane-Dick, 2006) establishes the positive effect of low-stakes, feedback-rich tasks on student achievement, particularly for learners at earlier stages of academic language development.



Initiative design

The initiative comprised three interconnected components implemented across selected undergraduate business modules.

Component one: redesigning assessment materials.

Existing assessment briefs were audited and found to use discipline-specific terminology without explanation and rubrics without sufficient descriptive detail. Revised briefs were produced using plain academic language, with all assessment terminology defined and the logical structure of each task made transparent (Wingate, 2015). Annotated exemplars illustrating work at different grade bands with commentary explaining evaluative decisions were hosted on the VLE. Research supports the value of exemplars in helping students calibrate their understanding of assessment expectations (Sadler, 2010; Handley and Williams, 2011).

Component two: embedding academic skills in teaching.

Rather than directing students to separate academic skills provision – a model criticised for marginalising those who need it most (Wingate, 2006) – the initiative embedded skills development within subject content through three mechanisms. Guided online activities practised key academic tasks such as structured argumentation and critical reading within the disciplinary context of the business modules. Recorded walkthroughs modelled the cognitive processes involved in approaching assessment tasks, making visible the reasoning behind academic decision-making and providing a form of cognitive apprenticeship (Collins, Brown and Newman, 1989; Vygotsky, 1978).

For adult learners managing study alongside employment, the ability to revisit these recordings asynchronously is particularly valuable (Hrastinski, 2019). Low-stakes formative tasks were introduced at regular intervals, building competence and confidence incrementally and allowing staff to identify misunderstandings before summative submission (Black and Wiliam, 1998).

Component three: staff professional development.

Inclusive assessment requires shifts in staff knowledge and practice, not only resource redesign (Timperley et al, 2007). A targeted programme addressed three areas: language-aware pedagogy, supporting staff to scaffold rather than assume academic language competence (Gibbons, 2009); inclusive feedback practices, developing accessible, criterion-referenced feedback that avoids idiomatic language opaque to EAL learners (Hyland and Hyland, 2006); and digital assessment design, building confidence in using the VLE consistently across teaching teams.

Professional development was delivered through collaborative workshops and peer observation with reflective discussion, reflecting evidence that teacher learning is most effective when situated in practice and sustained over time (Desimone, 2009).

Conclusion

This initiative demonstrates that inclusive, technology-enabled assessment is achievable within SSI/CBHE contexts without large-scale additional investment, provided the design is intentional and theoretically grounded. By embedding academic literacies within taught modules, redesigning assessment materials for transparency, and building staff capability through sustained professional development, ESL has developed a transferable model responsive to the realities of linguistically diverse adult learners.

Formal evaluation through analysis of progression data, student feedback and staff reflections will generate evidence to support wider adoption across the sector. For the multilingual adult learners who increasingly constitute the student body of SSI/CBHE institutions, structural commitment to inclusive assessment is not a supplement to quality education, it is its precondition.



References

- Black, P and Wiliam, D (1998) 'Assessment and classroom learning', *Assessment in Education: Principles, Policy and Practice*, 5 (1): 7-74.
- Collins, A, Brown, J S and Newman, S E (1989) 'Cognitive apprenticeship: teaching the crafts of reading, writing, and mathematics', in Resnick, L B (ed) *Knowing, learning, and instruction*. Hillsdale, NJ: Lawrence Erlbaum Associates, pp 453-494.
- Cummins, J (2000) *Language, power and pedagogy: bilingual children in the crossfire*. Clevedon: Multilingual Matters.
- Cummins, J (2015) 'How to reverse a legacy of exclusion? Identifying high-impact educational responses', *Language and Education*, 29 (3): 272-279.
- Desimone, L M (2009) 'Improving impact studies of teachers' professional development', *Educational Researcher*, 38 (3): 181-199.
- Gibbons, P (2009) *English learners, academic literacy, and thinking*. Portsmouth, NH: Heinemann.
- Gravells, A and Simpson, S (2014) *The award in education and training*. London: SAGE Publications.
- Handley, K and Williams, L (2011) 'From copying to learning: using exemplars to engage students with assessment criteria and feedback', *Assessment and Evaluation in Higher Education*, 36 (1): 95-108.
- Hockings, C (2010) *Inclusive learning and teaching in higher education: a synthesis of research*. York: Higher Education Academy.
- Hrastinski, S (2019) 'What do we mean by blended learning?', *TechTrends*, 63 (5): 564-569.
- Hyland, F and Hyland, K (2006) 'Feedback on second language students' writing', *Language Teaching*, 39 (2): 83-101.
- Lea, M R and Street, B V (1998) 'Student writing in higher education: an academic literacies approach', *Studies in Higher Education*, 23 (2): 157-172.
- Lillis, T and Scott, M (2007) 'Defining academic literacies research: issues of epistemology, ideology and strategy', *Journal of Applied Linguistics*, 4 (1): 5-32.
- Nicol, D J and Macfarlane-Dick, D (2006) 'Formative assessment and self-regulated learning: a model and seven principles of good feedback practice', *Studies in Higher Education*, 31 (2): 199-218.
- Parry, G, Callender, C, Scott, P and Temple, P (2012) *Understanding higher education in further education colleges*. London: Department for Business, Innovation and Skills.
- Rose, D H and Meyer, A (2002) *Teaching every student in the digital age: universal design for learning*. Alexandria, VA: ASCD.
- Sadler, D R (2010) 'Beyond feedback: developing student capability in complex appraisal', *Assessment and Evaluation in Higher Education*, 35 (5): 535-550.
- Shay, S (2008) 'Beyond social constructivist perspectives on assessment', *Teaching in Higher Education*, 13 (5): 595-605.
- Timperley, H, Wilson, A, Barrar, H and Fung, I (2007) *Teacher professional learning and development: best evidence synthesis iteration*. Wellington: Ministry of Education.
- Vygotsky, L S (1978) *Mind in society: the development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wingate, U (2006) 'Doing away with "study skills"', *Teaching in Higher Education*, 11 (4): 457-469.
- Wingate, U (2015) *Academic literacy and student diversity: the case for inclusive practice*. Bristol: Multilingual Matters.
- Wingate, U and Tribble, C (2012) 'The best of both worlds? Towards an English for academic purposes/academic literacies writing pedagogy', *Studies in Higher Education*, 37 (4): 481-495.



TechFest: an industry-engaged showcase model for developing a future-ready digital workforce

Ngozi Nneke, University Academy 92 (UA92), Manchester

Context

University Academy 92 (UA92) is a higher education institution in Greater Manchester with a strong commitment to employability, social mobility and industry engagement. Within the World of Digital, final-year Computer Science and Cyber Security students undertake project-based learning and assessment, developing substantial technical projects that demonstrate disciplinary knowledge, problem-solving capability, creativity and applied technical skills. While students consistently produce high-quality work, many lack confidence when presenting projects to external audiences and communicating their achievements beyond academic assessment. To address this challenge, staff within the World of Digital, working in collaboration with industry partners, developed TechFest, an industry-engaged showcase and mentoring programme designed to support students in becoming more confident, reflective and employable graduates.

Bridging the gap

TechFest was developed to help students communicate the knowledge, skills and experience gained through project-based learning in ways that resonate with professional audiences. Through industry engagement, mentoring, workshops and authentic presentation opportunities, students are encouraged to reflect on their achievements, build confidence and develop a stronger sense of professional identity. Rather than preparing students for a single event, the programme provides a structured developmental journey that supports their transition from higher education into graduate employment.

The TechFest approach

TechFest operates within UA92's block-based teaching model and typically runs from September to May. The programme combines industry engagement, mentoring and showcase-based learning to support students' professional development throughout the academic year.



The programme begins with industry-led workshops delivered by employer partners, professional practitioners, alumni and academic staff. These sessions focus on technical practice, industry trends, professional behaviours, communication skills, networking and employer expectations.

Students also receive structured mentoring to support project development, reflection and showcase preparation. The programme culminates in a public-facing showcase where students present their projects to academic staff, peers, employers, alumni and invited guests. Following the event, students participate in employability-focused mentoring activities that help them translate their experiences into CV content, LinkedIn profiles, application narratives and interview responses.

Implementation and growth

TechFest has evolved through three annual iterations, with each cycle informing the development of the next. The first iteration, TechFest 1.0, involved seven student presenters and attracted more than 40 attendees. The event demonstrated the value of providing students with authentic opportunities to communicate technical work to external audiences.

Notably, one student was offered employment directly by an industry attendee during the event, highlighting the potential impact of meaningful employer engagement.

Building on this success, TechFest 2.0 expanded to 15 student presenters and approximately 60 attendees. Industry participation increased through workshop delivery, attendance at the showcase and feedback on student projects. Although no direct employment offers were made during the event itself, graduate self-reporting and follow-up communication indicated that most participants secured graduate employment within three to twelve months of programme completion.

The third iteration, TechFest 3.0, demonstrates the continued growth and sustainability of the initiative, with 40 final-year Computer Science and Cyber Security students registered to participate. To strengthen the evidence base underpinning the programme, ethical approval has been secured to undertake a formal evaluation using pre- and post-intervention measures. This evaluation will explore changes in student confidence, professional identity, employability awareness and perceptions of career readiness.



Figure 1. Students and staff at the inaugural TechFest showcase (TechFest 1.0)

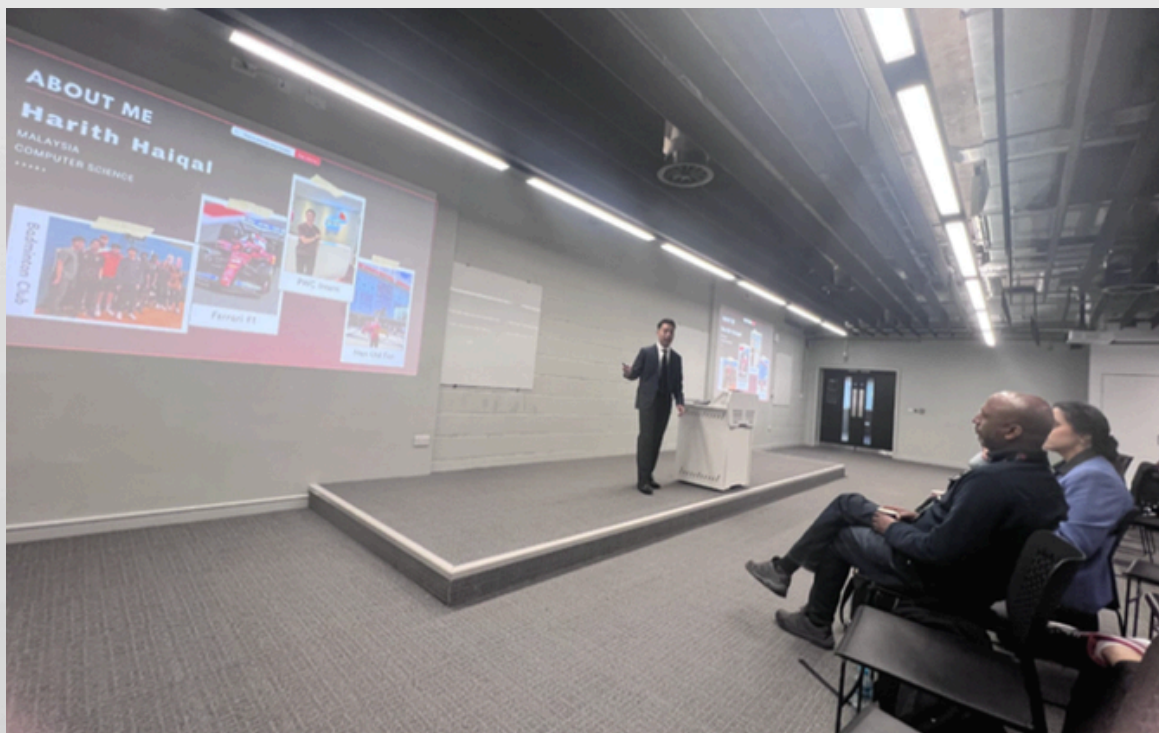


Figure 2. A final-year student presenting project work during TechFest 2.0

Throughout all three iterations, industry engagement has remained central to the programme. Employer partners have contributed workshops, attended showcase events, provided feedback on student work and supported networking opportunities, helping to ensure that the programme remains aligned with current industry expectations.

The continued development of TechFest has been supported through collaboration between academic staff, employer partners, alumni, and students, ensuring that the initiative remains responsive to industry needs and student aspirations.

Impact and outcomes

Feedback from students consistently highlights increased confidence in presenting technical work and engaging with professional audiences. Students report greater awareness of career pathways, improved ability to communicate their skills, and enhanced understanding of employer expectations.

One participant described TechFest as “a turning point”, explaining that the experience provided “a much clearer pathway for my career and a solid vision of where I want to go after university.” Another reflected that “being able to showcase my work was an incredible feeling” and that, for the first time, they felt genuinely proud of what they had achieved.

Employment outcomes have also been encouraging. Graduate destinations are tracked through voluntary self-reporting and follow-up communication.



Figure 3. Industry engagement during TechFest 2.0

Across the first two cohorts, students reported positive employment outcomes, including direct recruitment opportunities and graduate employment secured within the first year after completion. The programme has generated benefits for staff and industry partners as well as students. Academic staff have reported stronger alignment between project-based assessment and employability outcomes, while employer partners value the opportunity to engage with emerging talent and contribute to curriculum enhancement.

The growth in participation across successive iterations from seven students in the first showcase, to 15 in the second, and 40 registered participants in the third suggests increasing student confidence in engaging with industry-facing opportunities and demonstrates the sustainability of the model within the curriculum.

Lessons learned and transferability

TechFest demonstrates the value of combining industry engagement, mentoring and showcase-based assessment to help students communicate technical expertise and develop professional confidence. Although developed within UA92, the approach may be relevant to other Small Specialist Institutions (SSI) and College-Based Higher Education (CBHE) providers seeking to embed employability within project-based learning through industry engagement, mentoring, and authentic presentation opportunities.

Future developments

Future work will focus on analysing data collected through the ethics-approved evaluation and refining the mentoring framework that underpins the programme. Findings will be disseminated through Advance HE networks, conferences and scholarly outputs to support wider adoption of evidence-informed approaches to employability and professional identity development.

As higher education providers seek effective ways to prepare students for an increasingly complex digital workforce, TechFest demonstrates how sustained mentoring, industry engagement and showcase-based assessment can be integrated within existing curricula to strengthen confidence, professional identity and graduate employability.



The educator of 2040: investigating future teaching roles and technology-enabled pedagogies

Sandra Selvi, Mont Rose College

Introduction

The landscape of higher education in the UK has been profoundly reshaped by the rapid expansion of digital technologies, compelling educators and institutions to re-examine the very foundations of teaching, learning and curriculum design. As recent policy commentary highlights, the UK has long positioned itself as a leader in digital education innovation, with government strategies emphasising the role of technology in supporting economic transformation, resource optimisation and individual learning needs.

The swift evolution of microcomputers and subsequent technological developments have broadened opportunities for knowledge dissemination, but have also created significant tensions between policy aspirations and day-to-day pedagogical realities.

Consequently, universities now face the dual responsibility of equipping students with the technological competencies demanded by an increasingly digital society while simultaneously nurturing robust research capabilities and deep disciplinary understanding. This dual imperative is even more pressing in an era in which students often characterised as ‘digital natives’ enter higher education with well-formed learning preferences and notably heightened expectations for technology-mediated engagement. Yet the simple introduction of digital tools or AI into existing pedagogical routines has repeatedly proven insufficient. As UK research warns, without thoughtful pedagogical grounding, digital materials risk being merely “translated for the web” rather than re-imagined to harness their full educational potential.

Meaningful integration, therefore, requires careful, evidence-informed alignment with robust teaching frameworks, supported by sector-wide conversations about governance, data ethics and the responsible deployment of edtech – issues increasingly foregrounded in current discussions within UK higher education.

Context

Despite widespread access to digital resources, educational technologies continue to produce inconsistent outcomes, with benefits most evident when they extend and enhance established pedagogical practices rather than replace them outright. The central concern of this case study is the development of coherent frameworks for embedding technology-supported research activities that move beyond basic information retrieval towards fostering critical thinking, independent enquiry and meaningful engagement with disciplinary knowledge.



This investigation pursues three key objectives: firstly, to identify effective strategies for supporting students in the productive use of technological tools for independent research while maintaining rigorous academic standards; secondly, to determine the pedagogical conditions under which technology cultivates deeper, more analytical engagement with module content; and thirdly, to contribute to the ongoing academic debate concerning the balance between student autonomy and academic integrity in technology-mediated research environments.

Approach

The research will be grounded in a constructivist epistemology, recognising that knowledge will be actively constructed through ongoing cycles of practice, reflection and collaborative enquiry, consistent with constructivist claims that learners build understanding through experience and social interaction and that learning requires active engagement and reflection. Drawing on design-based research principles, the study will investigate how educators will develop technological fluency in tandem with the transformation of their instructional methods, acknowledging that constructivist approaches emphasise authentic, reflective learning rather than passive acquisition.

This approach will acknowledge the inherent complexity of pedagogical innovation within socio-technical systems shaped by teacher beliefs, institutional expectations and the affordances of emerging technologies, reflecting wider discussions about the challenges posed by constructivist epistemology in applied research contexts. Central to the methodological design will be the use of collaborative enquiry frameworks, positioning educators as active co-constructors of knowledge rather than passive recipients of technological change, aligning with constructivist understandings that knowledge is co-created through interaction and shared meaning-making.



Professional development activities will be structured around iterative cycles of theoretical exploration, practical experimentation and reflective dialogue. Data collection will be drawn on multiple evidence sources, including classroom observations, reflective writings, student artefacts and analytics from technology usage. Special attention will be given to students' patterns of smartphone engagement, offering insight into how learners interact with and repurpose digital tools beyond formal teaching contexts. Longitudinal tracking will enable researchers to document sustained changes in professional practice over time. The analytical framework will combine transformative learning theory with recognised technology-integration models, enabling the systematic identification of shifts in pedagogical reasoning, teacher identity and instructional decision-making.

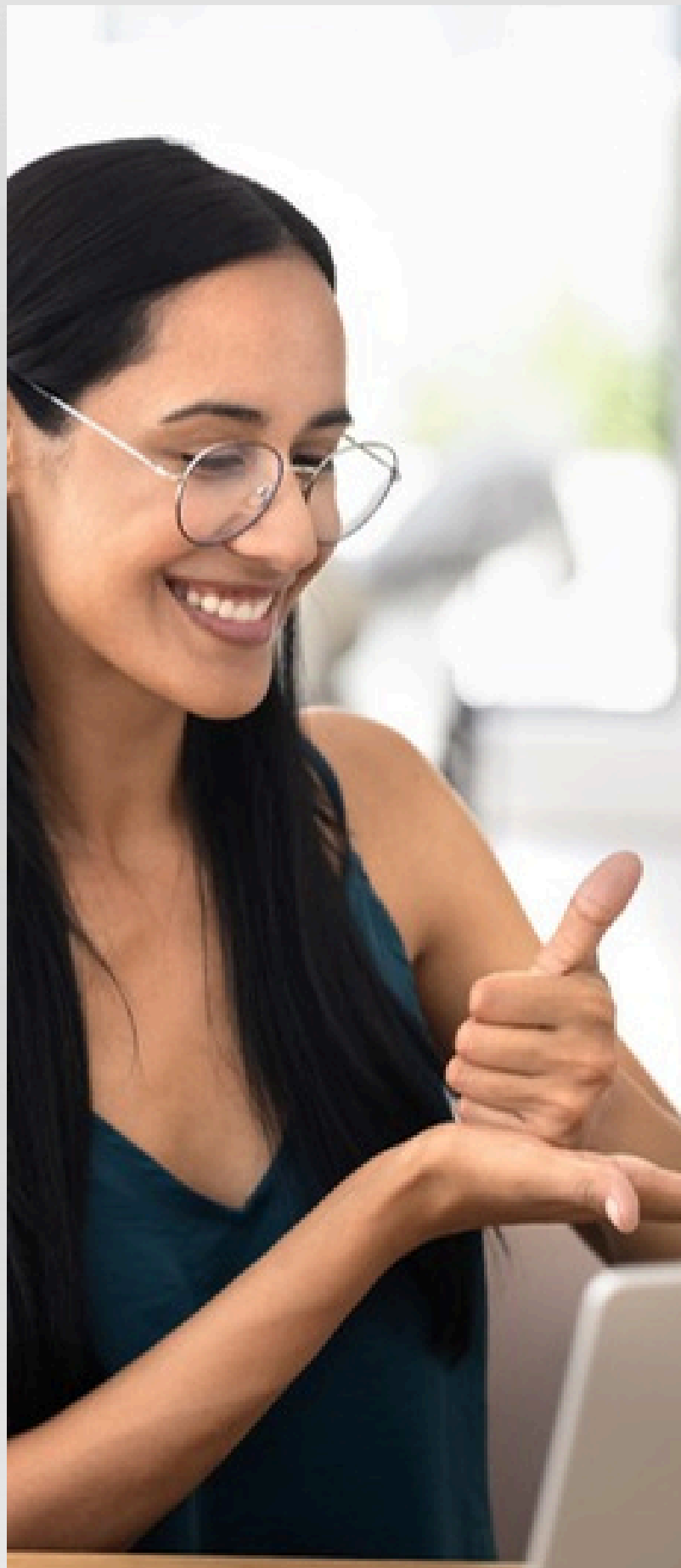
Impact and outcomes

The findings will highlight the importance of a fundamental reconceptualisation of pedagogy in response to technological change. Educators who engage deeply with theoretical frameworks and collaborative enquiry will experience significant shifts in their professional identity, moving away from traditional roles rooted in knowledge transmission and evolving towards practices centred on student-led enquiry and collaborative knowledge construction.

Students undertaking carefully scaffolded digital research tasks will show a clear shift from surface-level information gathering towards the critical synthesis and evaluative use of digital resources. Structured reflection, self-assessment and peer collaboration will become particularly effective mechanisms for strengthening disciplinary engagement. The extension of learning beyond conventional classroom boundaries enabled by mobile and networked technologies will also reshape the nature of student research.

Open educational practices will broaden students' access to people, content and ideas that would otherwise remain beyond reach, thereby shifting knowledge production towards distributed, networked communities. Cross-disciplinary analysis will continue to highlight the uneven diffusion of technological innovation, reinforcing the need for professional development that addresses both general digital competencies and discipline-specific pedagogies. Likewise, interactive digital environments, such as those explored in virtual heritage projects, will demonstrate significant potential to enrich learning across a wide range of subject areas.

The impact of this work will be evident across multiple dimensions. Students working within technology-mediated research frameworks will develop a deeper disciplinary understanding and will demonstrate greater analytical precision in their assessed work. Virtual manipulatives will strengthen conceptual understanding when embedded within coherent pedagogical designs, while mobile technologies will support more personalised and flexible learning experiences. Computer-assisted feedback tools will offer increasingly tailored support for individual learning trajectories.



Conclusion

For educators, collaborative professional development will foster notable shifts in pedagogical identity, supporting the emergence of innovative digital learning designs such as interactive archives, multimedia portfolios and collaborative online enquiry projects. These developments will continue to affirm that technology-mediated communication enhances educational discourse when firmly grounded in constructivist principles. At a broader level, the future of UK higher education will require ongoing, inclusive dialogue around AI, data governance and equitable access to digital tools as part of a sustainable and forward-looking digital learning ecosystem.

Looking ahead to 2040, educators will be expected to navigate a landscape characterised by personalised learning pathways, adaptive technologies and the seamless connection of formal and informal learning contexts. Current analyses suggest that digital education is likely to play an increasingly strategic role in national development, aligning with broader shifts in governance, economic priorities and technological ecosystems.

It is clear, however, that technology alone cannot secure meaningful pedagogical change. The future demands sustained investment in high-quality professional development, interdisciplinary collaboration and a sector-wide commitment to equity, innovation and pedagogical excellence.



Co-creating future talent: AI, startups and industry in the curriculum

Sandra Fernando, Shaun Borstock and Tracey Tattersall, Ravensbourne University London

Introduction

The project offers a practical, low-cost and transferable model for partner and other SSI and CBHE providers seeking to strengthen employability, staff capability and industry partnerships through curriculum-embedded live projects by enhancing Ravensbourne University London's Learning with Industry Framework (LWIF).

Two initiatives were piloted: 1) hackathon-style work-related learning activity and 2) AI/entrepreneurship course in which students responded to live challenge briefs set by technology co-founders, startup partners or industry leads within an international context.

In pilot 1, matchmaking between student engineers and founders' projects was supported through startup networking platforms. Students worked individually or in small teams to develop prototype solutions, supported by academic supervision and iterative feedback from industry partners. Two pilot cycles were delivered, of three weeks, with a final showcase to founders and external stakeholders. Deliverables included student prototypes, module completion, industry awards, employer feedback, paid work opportunities for some students and a documented case study.

In pilot 2, students worked in interdisciplinary teams to use generative AI (GenAI) and entrepreneurial skills to create outcomes for industry challenges. Deliverables include apps and AI-generated workflow models. Pilots responded to sector needs around graduate employability, rapid technological change and authentic learning.



KPIs included student participation, number of industry collaborations, quality of prototype outputs, staff confidence in delivering industry-linked interdisciplinary learning and paid progression opportunities. Students gained real-world project experience, interdisciplinary collaboration skills and direct exposure to industry challenges, using AI skills in one pilot.

Some secured paid opportunities, while engagement and attendance improved. Staff developed capability in supervising live industry briefs. Positive NSS-related feedback and student interviews suggest strong impact, with clear potential for future curriculum enhancement and wider sector learning.

Pilot 1: co-creating future talent through hackathon-based industry collaboration

The first pilot explored how hackathon-based work-related learning can provide a practical, low-cost and scalable approach to embedding industry engagement within higher education. The initiative aligns closely with Ravensbourne University London's Learning with Industry Framework (LWI), particularly through its use of founder-led live briefs, in-person mentoring and industry-facing student outputs.

Delivered in partnership with [founder matcha](#), a platform connecting universities, student talent and early-stage ventures through founder-led innovation projects, the pilot connected students directly with local and UK-wide technology founders and start-ups through authentic project-based learning designed to strengthen employability, innovation and industry readiness.

A defining feature of the model was its use of founder-led live briefs. Rather than engaging with simulated case studies, students worked on genuine challenges in artificial intelligence, software development, digital innovation, data analytics and user experience design. Local founders were physically present throughout the programme, participating in launch events demonstrated in Figure 1, mentoring sessions and final showcases. This level of engagement enabled frequent interaction, rapid feedback and relationship building, creating a highly authentic learning environment that reflected contemporary entrepreneurial practice.

Students selected projects aligned with their interests and participated in an intensive two-week innovation sprint. Throughout the process, founders, technical specialists and academic staff provided iterative guidance and challenge. The approach reflected core Learning with Industry principles by embedding employers directly within the learning process and exposing students to real organisational expectations, constraints and professional behaviours.



Figure 1. Local founders presenting live project briefs and engaging directly with students.



Figure 2. Students collaborating with founders and presenting prototype solutions to industry stakeholders

The model was intentionally designed to be accessible and transferable. Rather than relying on major infrastructure, international partnerships or significant financial investment, it leveraged local entrepreneurial networks and existing university expertise. This makes the approach attractive to institutions seeking to strengthen industry engagement while operating within constrained resources. The short hackathon format also reduced demands on founders, encouraging participation from small businesses and early-stage ventures that often struggle to engage with traditional placement models.

Students developed prototype solutions using machine learning, data analytics, dashboard visualisation, customer segmentation and AI-enabled techniques. Beyond technical capability, they strengthened communication, teamwork, adaptability and stakeholder-management skills. The pilot culminated in a showcase event where projects were evaluated by founders, industry professionals and academic staff against criteria including innovation, technical quality, creativity and potential organisational impact (Figure 2).

The impact was immediate and multidimensional. Student engagement, attendance and participation increased during the project period, while feedback consistently highlighted the value of working on challenges with genuine real-world relevance. Several participants secured ongoing collaboration opportunities, industry recognition and paid employment with participating organisations.

These outcomes demonstrate not only enhanced graduate employability but also tangible benefits for local founders who gained access to emerging talent, fresh perspectives and innovative solutions.

The pilot demonstrates how the Learning with Industry Framework can be operationalised through a simple but effective model that combines authentic briefs, founder mentorship and intensive project-based learning. By strengthening connections between universities, students and local innovation ecosystems, the initiative provides a replicable framework capable of supporting both future-ready graduates and regional economic growth.

Pilot 2: transatlantic AI and Entrepreneurship Certificate

The second pilot was an AI Entrepreneurship Certificate delivered through an innovative transatlantic collaboration between Ravensbourne University London, City College New York (CUNY), and MIT, uniting more than 60 students across 3,400 miles of Atlantic Ocean within a single shared learning experience.

This international dimension is central to what makes the initiative distinctive: students in London and New York worked together in real time, bringing different cultural perspectives, professional contexts and disciplinary backgrounds to bear on the same live industry challenges. The collaboration gave participants direct experience of working across national and institutional boundaries, mirroring the conditions of global professional practice in ways that would prove to be challenging for a single-institution programme to replicate.

A further defining feature of the programme was the deliberately broad spectrum of industry partners engaged that included established global corporations. Students worked on real briefs from companies including Zero BS, a South African skincare startup navigating its first UK market entry and Harris Tweed Hebrides, an internationally recognised craft manufacturer exploring circular economy models for surplus textiles, as well as major infrastructure and enterprise partners such as Openreach, the UK's largest broadband network, grappling with large-scale AI and data transformation.

This range was intentional. It required students to adapt their thinking, their communication and their use of AI tools depending on the scale, culture and risk appetite of the organisation they were working with, developing genuine professional versatility rather than familiarity with a single type of industry context.

Students were deliberately organised into multidisciplinary teams, drawing together individuals from business, design, technology, architecture and media. Rather than working in subject silos, teams were structured to mirror the cross-functional character of real professional environments, where complex problems demand contributions from people with different expertise, vocabularies and ways of thinking. This interdisciplinary design was the pedagogical mechanism that defined the programme, requiring students to negotiate differences in approach, develop shared frameworks and integrate AI tools in ways that served multiple perspectives simultaneously.

The composition of teams also reflected the widening participation ethos of both institutions, with a majority of students from first-generation university backgrounds, international and multicultural cohorts and a high proportion of neurodiverse participants, whose different cognitive styles often generated genuinely innovative outcomes.



Central to the programme's innovation was its insistence on live, real-world project briefs authored and owned by the industry partners themselves. Rather than simulated or adapted case studies, students received strategic challenges that partner companies were actively navigating. This included how to enter a new market without eroding brand margin, how to upskill an entire workforce for an AI-transformed data estate, how to design a circular economy product line worthy of a protected craft heritage.

These were not briefs with predetermined answers, they were open questions that companies needed help thinking through. Students used GenAI tools throughout a structured 15-week sprint methodology, applying large language models, data analysis and visualisation and AI-enabled workflow design to produce outputs including market-entry frameworks, persona-based capability roadmaps and product design proposals. Deliverables were executive-ready proposals intended for actual use by partner organisations, not academic assessments.

The impact of the pilot was visible in that students reported a significant increase in confidence in applying AI tools to real organisational problems, in communicating across disciplinary and cultural boundaries and in understanding the expectations of professional environments at both startup and corporate scale. Industry partners engaged actively throughout the process through structured check-ins, mentor days and a final presentation showcase, providing iterative feedback that required students to revise, reframe and develop resilience in the face of feedback from our industry partners who wrote the briefs.

For staff, the initiative opened new models of cross-institutional curriculum design and international partnership that are directly transferable to other SSI and CBHE providers seeking to embed AI, entrepreneurship and global collaboration within their learning frameworks. The transatlantic dimension, the breadth of industry partners, the multidisciplinary team structure and the authentic live brief format together constitute a distinctive and replicable model for future-ready higher education.





Centralising admissions governance: implementing a data-driven admissions hub in a college-based higher education provider

Seran Dalvi, Vikrant Dogra, Abeer Ahmed and Noor Ali, David Game Higher Education, transitioning to University Centre at David Game College, London

Context

Small, Specialist, Independent and College-Based Higher Education (SSI/CBHE) providers operate within tight resource constraints while delivering programmes that carry the same compliance, partnership and reporting expectations as large universities. Admissions sits at the centre of this pressure. It is the function where commercial growth, regulatory oversight and partner university requirements converge, yet it is frequently the function with the least system maturity.

Admissions had been managed across multiple disconnected spreadsheet trackers maintained by different teams and across different campuses. This produced inconsistent application status tracking, duplicated data handling, slowed reporting cycles and limited visibility for senior leadership and validating university partners. The operational risk was clear, but the scale of investment required for a conventional enterprise solution was deemed disproportionate to the institution's size.

David Game Higher Education (DGHE), an independent provider in the City of London delivering Higher National Diplomas and partner university degree programmes across a diverse portfolio spanning business, public services, computing, criminology and security, is now transitioning to University Centre at David Game College (UCDG) with the introduction of international postgraduate provision. It has tackled the admissions challenges directly.

Rather than purchase a third-party admissions CRM, the project was built around four design principles intended to keep the transformation appropriate to a small provider.

- AI-assisted tools were used during the design phase to map existing fragmented workflows, identify duplication, rationalise overlapping processes and structure the reporting logic underpinning the dashboards. This shortened the design phase considerably and revealed inefficiencies that had not been visible from within the legacy spreadsheet environment. The build itself reused existing institutional systems and required no additional licensing cost.

A further integrated feature of the Admissions Hub is an English proficiency breakdown capability, which disaggregates applicant English language evidence into component skill areas at the point of admission. This enables earlier identification of academic skills needs and provides structured information for academic teams and professional services, extending the value of admissions data across the wider institution rather than leaving it confined to the admissions function.

The Admissions Hub was designed and implemented over a six-month period. The project introduced a standardised application status framework covering the full applicant lifecycle from enquiry through to enrolment, automated workflow tracking across teams, and consolidated reporting dashboards enabling cross-campus coordination between the City of London and Croydon sites.

Before:

[illegible]

After:

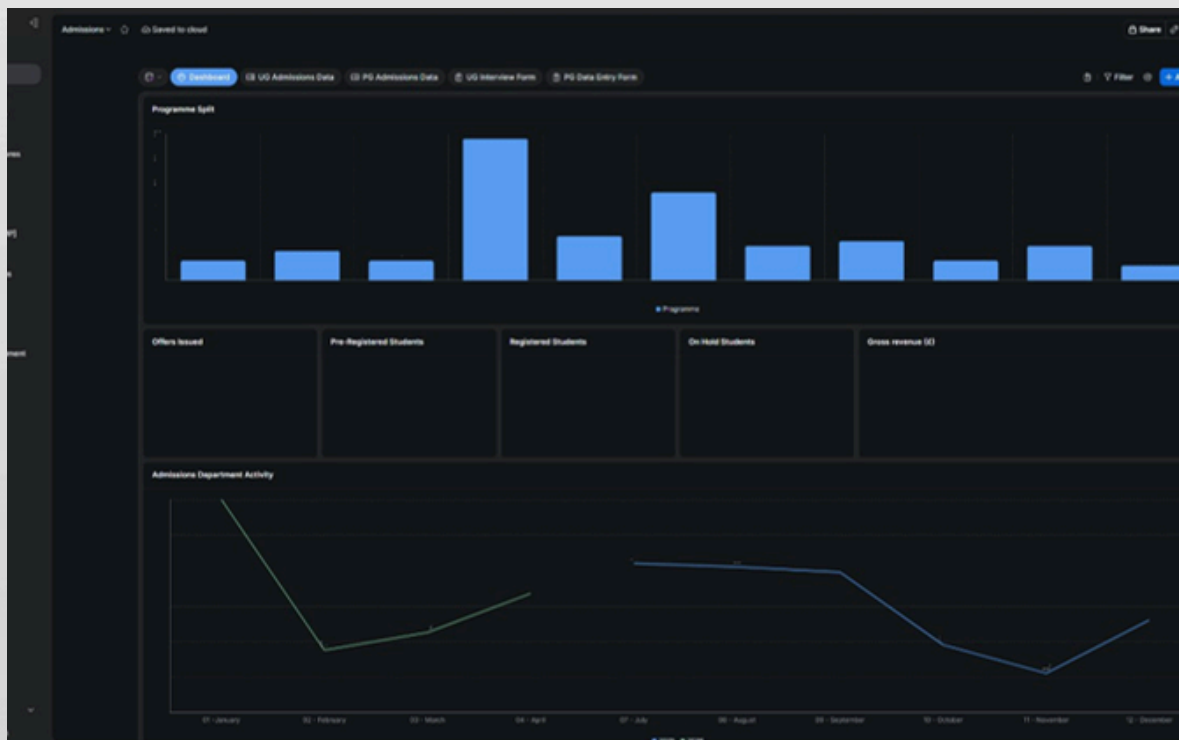


Figure 1. Admissions workflow before and after the Admissions Hub implementation - information has been redacted to comply with GDPR and UCDG policies

The result replaced multiple spreadsheet trackers with a single structured workflow, with clearer ownership at each stage and consistent visibility for admissions, registry, compliance and senior leadership.

Outcomes

The transformation produced measurable operational, governance and recruitment outcomes.

Operationally, manual spreadsheet tracking was reduced by over 60%, internal reporting cycles were significantly accelerated, and admissions decision visibility across campuses became consistent for the first time. Staff feedback highlighted reduced administrative duplication and clearer ownership of admissions stages. Compliance reporting for partner university requirements became substantially easier to produce, with auditable status histories replacing reconstructed spreadsheet snapshots.

“Before the Admissions Hub, we were maintaining several spreadsheets in parallel and constantly cross-checking them. The new system has given us a single, structured view of every application, which has made our day-to-day work significantly clearer and has freed up time for more meaningful applicant engagement.” (Abeer Ahmed, Senior International Admissions Officer, UCDG)

Recruitment outcomes improved alongside the operational change. The September 2025 intake, which was the first recruitment cycle following implementation, achieved record performance for the institution, increasing from the previous September intake by approximately 2% during a period when admissions teams were still adapting to the new workflow.

The January 2026 intake demonstrated the operational benefit more clearly. Enrolments increased by approximately 118% year-on-year, representing the first full recruitment cycle in which admissions staff were fully utilising the centralised workflow, dashboards and standardised application tracking framework.

Applicants benefited from faster communication turnaround and more consistent admissions decision timelines, both of which are particularly significant in the international recruitment market that UCDG is now expanding into.

Adoption maturity as a sector insight

The contrast between the two intakes is the most useful lesson for other providers. The September 2025 cycle showed marginal recruitment improvement despite full system deployment, because the admissions team was still embedding the new workflow into daily practice. The January 2026 cycle, by contrast, demonstrated the system's full operational potential once the team had moved past the adoption curve. For SSI and CBHE providers planning similar transformations, the key implication is that the first post-implementation cycle should be treated as a stabilisation period rather than a benchmark.

Transferable lessons for SSI and CBHE providers

Four lessons from this project may be useful for other small providers.

1. Frugal innovation is viable. Significant operational transformation can be achieved without enterprise-scale technology investment, provided workflow design is treated as the primary task.
2. AI is most valuable as a design accelerator. Used to map, rationalise and structure existing processes, AI compresses the design phase and produces a clearer build specification than internal teams could produce alone within the same timeframe.
3. Standardise before digitising. Workflow standardisation, ownership clarity and status frameworks must precede the technical build. Digitising fragmented processes reproduces fragmentation in a new format.
4. Plan for adoption maturity. Operational benefit emerges in the second cycle, not the first. Communicating this expectation to senior leadership protects the project from premature evaluation.



For UCDG, the Admissions Hub now provides the operational foundation for the institution's transition to university centre status and the launch of international postgraduate provision. For the wider SSI/CBHE sector, it offers a working example of how small providers can modernise operationally without depending on costly external platforms.

Future-ready finance education: leveraging hybrid and technology-enabled pedagogies for mature learners

Dr Tawfik Alhashemi, Senior Lecturer, Fairfield Schools of Business

Introduction and background

This case study comes from a simple problem that many lecturers in specialist business schools will recognise: students who know their subject from years of professional experience, but who struggle to perform once that knowledge has to be expressed in formal academic terms – especially in digital environments they have rarely or never encountered before.

Fairfield Schools of Business is a small specialist HE provider, specialising in the provision of business and finance education. Our students are mostly mature learners, usually aged between 28 and 56, many of whom are in accountancy, financial services or management roles while studying part-time. They've got real professional knowledge and they come to us. A student who has been preparing monthly management accounts for the last seven years certainly does not need telling what depreciation is. What they do need is an understanding of how to analyse and critically evaluate financial data in an academic context, how to structure and evidence an argument, and how to navigate the online tools and platforms that have become central to both study and professional practice.

The results from our Finance and Accounting modules at Level 5 in 2023-24 were disappointing. Overall, the pass rate between the two classes was 79%. There were nine students who failed the exam and seven who failed the assignment. The average exam score was 61% and the average assignment score was 50%. Post-module evaluations repeatedly echoed the same concerns: students reported that the teaching was not relevant to contemporary professional practice, that the online materials were difficult to navigate and that there was not enough structured support for those less comfortable with digital tools. Instead of fine-tuning, we chose to totally re-engineer the delivery model for 2024-25. This case study describes what we did, why we did it and what happened as a result.



The student group and starting point

In 2024-25 there were two classes in Finance and Accounting of 40 students each, for an aggregate cohort of 80. Across the two classes, around 65% were in full-time work, 18% were in part-time jobs and the remaining 17% were studying full-time. Approximately one-third stated in the pre-module survey that they had not been in formal education for over five years. Age range was 22 to 56, median age 34.

Assessment was fixed by the module specification – a written examination accounting for 20% of the overall grade, and a portfolio-based assignment accounting for the remaining 80%. The exam was a 90-minute paper applying financial concepts to unseen case material. Students were required to write a financial analysis report on a real company with ratio analysis, cash flow commentary and a short evaluative section.

The pre-module survey asked students to rate their confidence with a range of digital tools on a scale of 1 to 5. The self-rating was on average 2.4 out of 5 for independent use of the VLE, 2.1 for use of online financial modelling tools, and 2.9 for participation in live online sessions. These were not catastrophically low scores, but low enough to suggest that digital access and confidence would have to be actively managed rather than taken for granted.

A specific problem with the assignment had also been highlighted in the previous year's module evaluation: students did not know how to approach the open-ended analytical element. Several had made competent calculations of ratios but then seemed at a loss to know what to say about them. This was less a gap in knowledge than in confidence and framing – they knew what the numbers meant from their professional lives, but had not been taught how to write about them analytically in a way that an academic assignment requires.



What we changed and why

The main change was a move from a largely face-to-face lecture model to a structured hybrid approach. Each week was the same rhythm, students would watch a 20-25 minute pre-recorded lecture before the session, which allowed the live time to be used to work through problems instead of receiving information. Live sessions were held via Teams and recordings were made available for those who were unable to attend in real time. They were used for worked examples, group problem solving and direct question-and-answer.

It was not a new idea in principle (Laurillard, 2012; Beetham and Sharpe, 2019), but it required a lot of preparation to make it work well with this group. The pre-recorded lectures included knowledge-check questions at key points, which students had to complete before the live session – providing a reliable indication of where confusion lay before anyone set foot in the (virtual) room. It also provided a reason for students who watched at 11pm after putting their children to bed to stay involved with the material rather than letting it wash over them passively.

Financial simulation software was made available through an online portal starting from week four of the course. This software allowed students to analyse publicly available accounts for the respective firms – we took a manufacturing firm based out of our region and a UK listed retailer for the purpose of study as both had easily understandable accounts.

The simulation involved entering certain figures, computing ratios, and then explaining what they mean. While this seems like a fairly straightforward process, it is the explaining bit that made all the difference. Previously, students have done ratio computation without having to explain what each ratio means for that particular organisation in that particular year. Several students said during the tutorials that they never thought of linking numbers to reality until they had to provide an explanation in their own words.

Considering the criticism that students received last year regarding uncertainty with regards to the analytical component of the assignment, we have included three scaffolding structures in our curriculum. First, an example of a ratio analysis with a fictitious company is provided in week five. This provides students with insight into what a sound financial analysis looks like. This is not meant as a template but rather a model for how one should reason when writing the assignment. Second, a mandatory submission of a ratio analysis section in week eight. Students submit an initial ratio analysis for which they receive written feedback within five business days.

In hindsight, the formative draft turned out to be the most significant revision made to the process of assigning work. Out of the total number of 80 students, 74 gave in their formative drafts. This feedback gave us a clear idea of who was performing well and who was facing problems, hence allowing for early intervention before the deadline.

Supporting digital access

In week one, both groups received an orientation on digital resources, which included a guided tour lasting 45 minutes of the VLE, Teams and the simulation tool. Furthermore, there were also some brief written guides that addressed the common tasks, namely viewing the recorded lectures, completing assignments via the VLE and using the simulation tool. The guides were one page each and did not use any complicated language.

An open drop-in service for a period of 30 minutes every week was also set up throughout the entire semester, and any student who had difficulty due to any access or technical problem could attend this service. Attendance was low, with between three and eight students attending each week, but most of the students who attended regularly belonged to the group of those who had the lowest digital confidence according to the survey before starting the module.



Results

Examination

The examination was carried out among all 80 participants. Altogether, 32 students (40%) scored above 80%. This outcome exceeded expectations due to the performance of the past group, where only 22 (28%) performed at this level. Only three did not pass, compared to nine the previous year. In Class A, the average was 74%, while Class B's was 73%. Thus, the overall mean was 73.5%, which is an improvement over last year's 61%.

The largest improvement came from the part of the test where the students had to analyse a brief business situation rather than just perform calculations for an answer. Last year, the average grade on that part of the exam was 52%. This year, however, during the 2024-25 school year, the average score increased to 71%. Such an improvement is in tune with the simulations and live class tutorials, which focused precisely on interpretative analysis.

Assignment

The results generated through this assignment are consistent with what one might expect to see in a group of mature students who have a varied background in academic writing. In this regard, 46 out of 80 students scored between 50% and 59%, meaning that they exhibited adequate mastery without being distinguished. The result is generally consistent with what would be expected in a Level 5 course since the students knew how to apply their knowledge effectively.

Year-on-year comparison

Performance criteria of the previous cohort can be seen in Table 1 using the same system of evaluation (with the 20/80 distribution existing for three years already). Both improvements shown in each component of evaluation are consistent with both classes, allowing the conclusion that they demonstrate real progress rather than merely an able group of students.

Measure	Prior cohort 2023–24	Project cohort 2024–25
Total students (both classes)	80	80
Exam: average score	61%	73.5% (+12.5pp)
Exam: failure rate	11% (9 students)	4% (3 students)
Exam: scoring 80% or above	28% (22 students)	40% (32 students)
Assignment: average score	50%	57.5% (+7.5pp)
Assignment: failure rate	9% (7 students)	1% (1 student)
Assignment: distinction rate	0%	4% (3 students)
Overall module pass rate	79%	94%
Assessment submission rate	84%	97%

Table 1: Year-on-year performance comparison (both classes combined)

Student feedback

An end of module survey yielded a 73/80 (91%) response rate. The average score for module satisfaction is 4.3 on a scale of 5, which shows an improvement from last year's score of 3.1. Comments selected from the open-ended responses have been included below:

"The recorded lectures were a lifesaver. I work shifts and I missed three of the live sessions – but I watched every recording and never felt behind. That would not have been possible the old way." – Class B student, manufacturing sector

"The formative feedback was the most useful thing I have had in any module so far. I genuinely did not know what 'critical analysis' meant in a finance context until I read the comments on my draft. My final mark was 63%, which I am really pleased with." – Class A student, returning to education after 11 years

"I will be honest – I was ready to drop the module in week two because I could not figure out the simulation tool and it made me feel stupid. The drop-in session sorted it out in about 20 minutes. I wish I had gone in week one." – Class B student, currently working in financial compliance

"The company case studies were from real businesses I could look up. That made a real difference to me – I was not just analysing numbers on a page, I was analysing an actual company I could think about." – Class A student, part-time bookkeeper

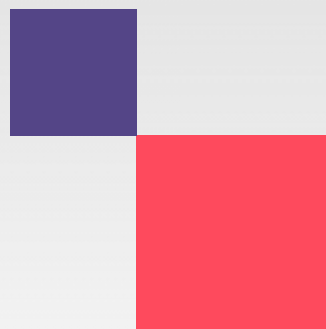
There were some constructive criticisms which were mentioned in the feedback that need to be considered. Four students pointed out that the formative deadline that was set in the eighth week was early because of their studies and family commitments during that particular week. Two students who are from Class B highlighted the fact that the tutorials conducted by the teacher were conducted too quickly. They should have taken a slower pace while solving the worked examples.

Conclusion

While the key data related to this project looks promising, with pass rates on the examination dropping from 11% to 4%, pass rates on assignments dropping from 9% to 1% and 40% of students receiving distinction marks on the examination as opposed to 28% before, perhaps the most important information may actually be found in other statistics. For instance, there was a student who almost dropped out of the course in week two because of having problems with the simulation program, but ended up completing the course with 64% on the assignment. There were also four students who hadn't been involved in any educational process for over a decade and continued attending weekly sessions on the material presented beforehand.

The framing of the 'Educator of 2040' theme upon which this funding idea relies is often spoken about in general terms – technology such as artificial intelligence, personalisation and adaptivity. The project suggests that, in the case of adult learners, what really matters is far more basic: flexibility in accessing material, assistance where it is necessary and learning material relevant to existing professions. What really matters here is addressing these basics more than it is picking the best technologies.

Perhaps our study can also prove useful for other smaller firms that face similar concerns. We would not mind sharing our resources or collaborating with any interested parties.



References

Beetham, H and Sharpe, R (eds) (2019) *Rethinking pedagogy for a digital age: principles and practices of design*. 3rd edn. London: Routledge.

Bloom, B S (1956) *Taxonomy of educational objectives: the classification of educational goals. Handbook I: Cognitive domain*. New York: David McKay.

Braun, V and Clarke, V (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, 3 (2): 77-101. Available at: doi.org/10.1191/1478088706qp063oa

Garrison, D R, Anderson, T and Archer, W (1999) 'Critical inquiry in a text-based environment: computer conferencing in higher education', *The Internet and Higher Education*, 2 (2-3): 87-105. Available at: [doi.org/10.1016/S1096-7516\(00\)00016-6](https://doi.org/10.1016/S1096-7516(00)00016-6)

Knowles, M S, Holton, E F and Swanson, R A (2015) *The adult learner: the definitive classic in adult education and human resource development*. 8th edn. London: Routledge.

Kolb, D A (2015) *Experiential learning: experience as the source of learning and development*. 2nd edn. Upper Saddle River, NJ: Pearson Education.

Laurillard, D (2012) *Teaching as a design science: building pedagogical patterns for learning and technology*. New York: Routledge.

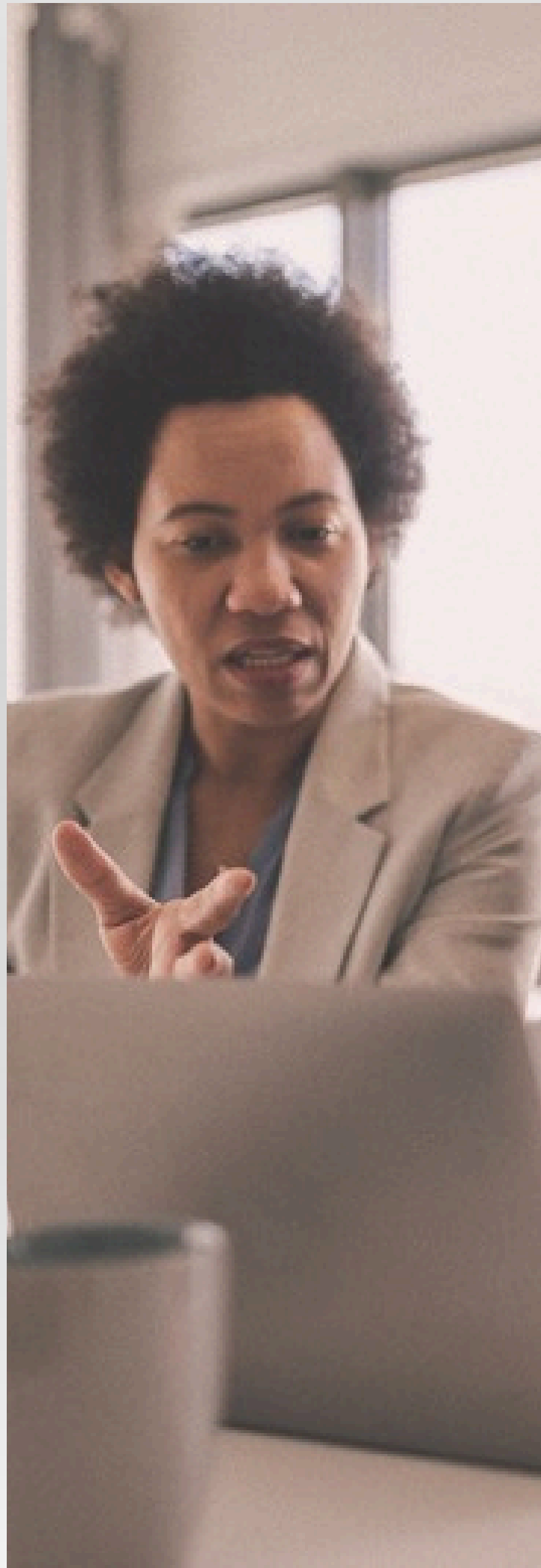
McGivney, V (2004) 'Understanding persistence in adult learning', *Open Learning: The Journal of Open, Distance and e-Learning*, 19 (1): 33-46. Available at: doi.org/10.1080/0268051042000177836

Office for Students (OfS) (2023) *Access and participation planning: sector guidance 2023*. Bristol: OfS.

Selwyn, N (2022) *Education and technology: key issues and debates*. 3rd edn. London: Bloomsbury Academic.

Waller, R (2006) 'I do not feel like a student, I feel like me: the over-riding importance of self-concept to the mature student', *Journal of Access Policy and Practice*, 3 (2): 153-171.

Wang, N, Chen, J, Tai, M and Zhang, J (2021) 'Blended learning for Chinese university EFL learners: learning environment and learner perceptions', *Computer Assisted Language Learning*, 34 (3): 297-323. Available at: doi.org/10.1080/09588221.2019.1607881



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