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Scholarship & Development at RCL

Research and Scholarship Digest: Editor's introduction

Welcome to the thirteenth issue of the Research and Scholarship Digest!

We are pleased to present this issue, which brings together a compelling collection of papers authored by staff from across Regent College London (RCL). This issue demonstrates the breadth of the scholarly work taking place within our community, and we hope it serves as both a resource and an inspiration for colleagues engaged in teaching, research, and professional practice.

The papers in this issue are grouped under three themes, each of which engages with questions and pressures shaping higher education today. The first theme, **Teaching**, **Learning and Assessment**, explores how pedagogy and assessment practice are evolving in response to new technologies such as generative AI while maintaining focus on core areas such as student engagement and critical thinking. The second theme, **Inclusion and Wellbeing,** considers the human aspects of higher education, with papers addressing disability support, mental health, language and identity, and inclusive learning environments. The third theme, **Inquiry and Innovation,** covers work around research approaches and methodology, from quantum machine learning to diary-based methods for understanding everyday behaviour.

Together, these papers demonstrate a wide range of scholarly topics and activities with which RCL colleagues are engaging. They also seek a common aim: to understand and enhance the student experience. Therefore, we invite you to read, engage, and get curious, whatever your role or starting point.

We are grateful to all the authors who have contributed to this Issue.

May this publication continue to inspire you as researchers and scholars!

Dr Anna Wharton, Editor

**Please note that references and sources are included as hyperlinks within the text, indicated by underlined words or phrases.*

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AI and adaptive assessments: Driving engagement and achievements in higher education

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With the growth of online education, the demand for personalised and engaging learning experiences is stronger than ever. Postgraduate students, often balancing professional and academic responsibilities, need assessments that do more than measure performance – they need assessments that guide learning, adapt to individual needs, and foster confidence while preparing learners to apply theoretical knowledge in real-world contexts.

Adaptive assessments

Adaptive assessments represent a promising approach to addressing these needs, tailoring the level of challenge based on student responses to create more engaging and formative experiences. However, they are complex to design and more time-consuming than traditional assessments. The integration of generative artificial intelligence (AI) tools offers new possibilities for streamlining this process, enabling educators to create wider ranges of options while significantly reducing preparation time and workload.

Research supports this approach. Adaptive learning systems improve engagement and retention by offering personalised feedback and progression. Formative assessment theory emphasises feedback and iterative improvement as key to learning. Authentic assessment principles - realistic tasks, cognitive challenge, and evaluative judgement - further strengthen the case for adaptivity.

For postgraduate learners, adaptivity makes assessments not just evaluative but truly developmental. Rather than penalising students for initial errors, adaptive design guides them towards mastery through feedback and re-engagement. Indeed, this approach offers distinct advantages for postgraduate learners. Realistic scenarios and branching pathways create relevance and challenge that resonate with professionally experienced students, while immediate feedback helps correct misconceptions early, building confidence rather than undermining it. Perhaps most importantly, adaptivity accommodates diverse starting points and levels of prior knowledge, allowing students to progress at appropriate levels of challenge regardless of background.

This paper describes a practical implementation of AI-driven adaptive formative assessments within an MBA Marketing and Operations module, examining both the development process and student outcomes. The study investigates how generative AI can support educators in creating realistic, context-rich scenarios while Microsoft Forms' branching functionality enables personalised learning pathways. The next sections outline the project design and AI integration approach, present findings on student engagement and learning outcomes, discuss pedagogical implications for postgraduate education, and consider challenges and future directions for the implementation of adaptive assessments.

The project: AI meets adaptive design

We piloted two adaptive formative assessments within an MBA Marketing and Operations module. Two cohorts of MBA students participated in this study during the 2024-2025 academic year: 69 students enrolled in the online program and 58 students enrolled in the face-to-face program, for a total of 127 students across both delivery modes.

Each assessment was built around a realistic business scenario:

Formative Assessment 1 (FA1) covered the first part of the module curriculum, around marketing, and required students to develop a marketing strategy for the launch of the new plant-based snacks at

GreenBite. This assessment guided students through questions on market research, customer segmentation, unique selling propositions, targeting strategies for different demographic groups (families, vegans, young professionals, Gen Z consumers), communication mix elements, and the RACE model (Reach, Act, Convert, Engage) for digital marketing planning.

Formative Assessment 2 (FA2) focused on assessing understanding of the second part of the module, and required students to create an operations plan that supports the expansion of Moda Verde's sustainable fashion supply chain. Students navigated questions addressing supplier selection, inventory management, distribution strategies, quality control, and sustainable sourcing practices.

Using Microsoft Forms' branching function, the quizzes adapted to students' responses. Correct answers typically led to the next set of questions, maintaining progression through the scenario. Incorrect answers triggered immediate feedback and a simplified follow-up question, allowing students to demonstrate understanding before proceeding. This design supported formative learning by diagnosing gaps, providing timely feedback, and enabling progression without grade pressure.

Creating the assessments

Generative AI played a key role in creating these scenarios. Initial drafts of the quizzes were produced using Microsoft Copilot, selected due to its availability through an institutional subscription, which promised enhanced features and flexibility. Microsoft Forms was chosen as the assessment platform for its institutional accessibility and ease of colleague collaboration in delivering assessments to students.

However, after initial implementation, observable differences in output quality became apparent. Copilot's responses, while functional, tended towards formulaic language and repetitive phrasing that lacked the authenticity required for realistic business scenarios. Therefore, the author switched to Claude AI, which offered more nuanced responses and provided more opportunities for tweaking and adjusting the content presented in response to prompts. This experience is consistent with other comparative analyses that highlight Claude AI's more natural conversational capabilities and consistency across complex and multi-layered scenarios, which are particularly important for educational applications.

The creation of the quizzes followed an iterative process combining AI-generated content with human pedagogical oversight. Answers were categorised by levels of complexity, with branching pathways designed to adapt to student responses. This approach leveraged AI efficiency for initial generation while ensuring cohesiveness, logical flow, alignment with learning outcomes, and authenticity consistent with industry practices through educator refinement.

Findings and insights

Participation rates varied across the two assessments. FA1 (GreenBite marketing strategy) received 74 total attempts from students across both cohorts, with 38 students (approximately 51% of those who attempted) completing the accompanying feedback questionnaire. FA2 (Moda Verde operations plan) had 44 attempts with 20 feedback responses (approximately 45% of those who attempted).

While total participation numbers were lower than anticipated, the quality of feedback received was notably positive. Students found the assessments accessible and manageable in terms of time investment. Average completion time for FA1 was 12:28 minutes, while FA2 averaged 11:58 minutes, suggesting that the adaptive branching created efficient learning pathways without excessive time burden on busy postgraduate students. Notably, some students attempted the assessments multiple times - differences in completion time and scores across attempts suggest students were using the assessments strategically to improve their understanding and performance.

Student perception and performance insights

Among the students who completed the feedback questionnaire, 92% rated FA1 as very or extremely helpful. Students particularly valued the immediate feedback and integration of multiple marketing concepts within a realistic business context. Feedback for FA2, while also positive, was less enthusiastic than for the first assessment.

Confidence levels regarding application of concepts post-assessment were moderate to high. Specifically, 50% of students who provided feedback reported feeling very confident applying concepts after completing the assessments, indicating that the adaptive format with immediate feedback successfully supported learning transfer.

Analysis of student performance data, derived from Microsoft Forms' tracking of student responses, attempt patterns, and question completion rates, revealed important insights about conceptual understanding and curriculum gaps.

A particularly noteworthy pattern emerged from FA2: Question 8, which addressed strategic sourcing in sustainable supply chains, proved to be particularly challenging. Nearly all students had to attempt the question more than once, showing poor understanding of the trade-offs between different distribution approaches in sustainable fashion retail. The high number of incorrect responses suggests that future curriculum planning should dedicate more teaching time to sustainable sourcing strategies and the environmental impact of different distribution models, potentially adding supplementary activities to reinforce these concepts.

Looking Ahead

This project represents an initial step towards integrating AI-driven adaptive assessments into postgraduate education. Several challenges and lessons emerged from implementation. Designing adaptive assessments proved time-intensive, requiring multiple question variants and careful pathway mapping. While Microsoft Forms offered wide accessibility and cost-effective branching options suitable for institutional adoption, current tools lack the sophistication of dedicated platforms.

Purpose made platforms such as PrairieLearn make it possible to upload more comprehensive question banks and algorithms to dynamically select questions based on student performance, enabling more nuanced adaptation than simple branching logic allows. Future iterations of this project should explore these advanced platforms, which could offer greater flexibility in difficulty progression, more sophisticated diagnostic capabilities, and automated personalisation at scale.

Student engagement also requires deliberate strategies. While feedback quality was high among participants, overall participation rates suggest that formative assessments need clearer integration into course structure and stronger communication about their developmental purpose. Future implementation should embed formative assessments more explicitly within scheduled learning activities.

Looking ahead, as AI technologies continue to advance, opportunities will emerge for increasingly responsive learning environments, where assessments adapt dynamically, analyse patterns across cohorts, and provide personalised resources in real time. Developing AI literacy among both educators and students will be essential to ensure these tools support deep learning rather than becoming passive exercises. Overall, AI-driven adaptive formative assessments demonstrate significant potential to enhance engagement and achievement when thoughtfully designed and embedded within pedagogically sound frameworks.

Studying 'alone' in the age of Gen AI: Reframing independent learning

Shan Ali, Lecturer, School of Business

Across UK higher education (HE), independent learning is decreasingly 'independent'. A 2025 survey from the Higher Education Policy Institute reports that 92% of undergraduates use AI tools and 88% have used them in assessed work, commonly to clarify concepts, summarise readings, and generate ideas. As students increasingly make use of generative AI and research on it expands, debate tends to polarise between policing gen AI as an integrity risk and embracing it as a study assistant.

Self-regulated learning (SRL) theory points to a sharper question: when ChatGPT sits alongside the student during 'independent study', who is regulating learning? Drawing on research on SRL and work on cognitive offloading, this author suggests that gen AI can scaffold self-regulation while also displacing the regulatory work that makes learning independent.

This paper reframes independent learning as self-regulation, maps common AI uses onto the SRL cycle to identify where offloading is most consequential, and proposes design principles for AI-aware independent tasks that keep key phases non-negotiably human.

Independent learning as self-regulation

Modern SRL research positions independent learning as a coordinated set of cognitive, motivational, and behavioural processes. Ernesto Panadero's synthesis of influential SRL models, including Barry Zimmerman's seminal cyclical SRL model, finds broad agreement that effective learning unfolds cyclically across at least three phases: forethought (planning and goal setting), performance (strategy use and monitoring), and self reflection (evaluation and adaptation).

High-achieving students set specific goals, select strategies, self-monitor, and adapt when approaches prove ineffective. Recent analysis also indicates that explicit SRL training around goal-setting, monitoring prompts, and reflection tools, improves achievement, particularly when integrated into authentic course tasks rather than delivered as generic study-skills workshops.

Digital environments can intensify the demands on SRL. Research on hypermedia shows that open, resource-rich environments can support deeper understanding only when learners actively plan and monitor their navigation; otherwise, students can drift and become overwhelmed. In short, independent learning is already fragile before AI enters the picture. Many students are aware of useful strategies, but struggle to use them under pressure. Generative AI arrives as an exceptionally attractive way to outsource parts of that regulatory work.

Generative AI as cognitive offloading

Cognitive offloading can be understood as the use of physical action or external tools to reduce the cognitive demands of a task. This has long been observed in simple forms, such as using a calculator or writing reminders. Generative AI extends this logic towards planning, explanation, and evaluation. Reviews of ChatGPT use in HE consistently identify four common applications: idea generation, explanation and simplification, drafting and editing, and coding support. Mapped onto Zimmerman's SRL cycle, AI can act as a co-regulator at every phase, as shown in Table 1 below.

SRL phase (Zimmerman)	Typical student challenges in HE	Common ways ChatGPT is used	Potential risk to Self-Regulation
Forethought (goals, planning)	Unclear goals; difficulty translating learning outcomes into concrete study plans	Asking AI to suggest research questions, outline essays or generate study plans	Goals and plans are accepted uncritically; students practise *following* plans more than *designing* them
Performance (strategy use, monitoring)	Limited repertoire of strategies; weak monitoring of understanding	On-demand explanations, examples, worked solutions, code fixes	Monitoring outsourced to AI ("if it runs, I understand"); less productive struggle and self-explanation
Self-reflection (evaluation, adaptation)	Superficial review of feedback; difficulty judging the quality of own work	Asking AI to critique drafts, mark essays, or suggest improvements	External judgements replace students' own criteria and standards; weaker calibration of quality

Table 1: Adapted from cyclical SRL model and cognitive offloading framework

A review of ChatGPT in HE recently found that students primarily use ChatGPT to 'save time', 'improve wording', and 'clarify concepts', often at the expense of deeper engagement with source material. A further systematic review of 39 studies associated ChatGPT use with improved knowledge access and emotional support, but also with technostress and substitution of AI for students' own reasoning.

Another study of Pakistani university students found that heavier generative AI use was linked to greater procrastination, self-reported memory problems, and lower academic performance. Together, these findings suggest that generative AI can function as either a sophisticated SRL scaffold or a shortcut around the skills that educators are trying to cultivate.

Designing AI-aware independent tasks

If Zimmerman's SRL model serves as a normative framework for independent learning, a practical design question follows: which parts of the cycle should remain predominantly human-regulated, and where can AI legitimately share the load? Three key principles for designing independent tasks emerge from the research around SRL and cognitive offloading.

The first design principle is to keep goal setting and criteria primarily human. SRL intervention research indicates students benefit most when they set their own specific, challenging goals linked to explicit success criteria. Allowing ChatGPT to propose initial questions or plans is not inherently problematic, provided students are required to interrogate and revise those suggestions. For example, an assessment brief might ask students to: generate an initial essay question with ChatGPT; critique it against the module learning outcomes and assessment rubric; and document how and why they modified it. AI surfaces possibilities, but the intellectual work of deciding whether a question is worthwhile for this module, in this context, stays with the student.

The second design principle is to make the AI-supported performance phase visibly effortful. Digital SRL research consistently shows that tools are effective only when they direct a learner's attention to their own thinking rather than simply supplying more content. In AI-rich environments, this means designing tasks that require active engagement with AI outputs, not passive consumption.

Rather than permitting students to paste AI-generated summaries into their notes, tasks might require a comparative table where students paraphrase a reading in their own words, then set it against a ChatGPT explanation to identify points of agreement, disagreement, and uncertainty. Another task might require students to provide a line-by-line annotation of AI-produced solutions in their own words. A lecturer may also make use of a short quiz that targets concepts students report having understood with AI support in order to ensure comprehension. These strategies use AI as a tool to reveal gaps in understanding.

The third principle for designing independent tasks is to anchor reflection in human judgement, with AI as a second opinion. Research suggests that substantial ChatGPT use is associated with poorer calibration of effort and performance, raising concerns that students may outsource not only drafting but also quality judgement to AI. AI structured 'dual-view' reflection can address this. That is, after producing a draft, students can evaluate their work against a rubric and write a brief self-assessment. Following that, they can request feedback from ChatGPT on the same draft using a controlled prompt. They can then compare the two sets of feedback, one a self-assessment and one from ChatGPT, to note where they are similar and different, and where there is still room for improvement in their draft. This approach aligns with evidence that explicit metacognitive instruction to monitor, evaluate and plan next steps is more effective than generic encouragement to 'use feedback'. In this way, AI is positioned as a contributor to a human-led reflective process.

Towards independent judgement, not AI abstinence

Emerging research is consistent, showing generative AI is often already embedded within students' study practices. Calls to ban AI during independent learning ignore both that reality and existing evidence that students already offload cognitive effort across a range of other tools. Zimmerman's SRL model and the cognitive offloading literature offer a more productive framing. Indeed, rather than asking whether independent learning is still 'independent' when students use ChatGPT, we can ask which aspects of self-regulation we are willing to delegate to tools, and which must remain core human capabilities for our students.

The self-regulating learning cycle of forethought, performance, and reflection should frame the approach to using, but not relying on AI. Forethought, including goal setting, standard-setting, and ethical judgement should remain primarily human, with AI used only to generate options that students must justify. Performance can be AI supported where tasks require visible engagement with material and explicit verification of outputs. Reflection must treat AI as a second opinion, with structured comparison against students' own and tutors' evaluations. Higher education must redesign 'independent' tasks, so that the central outcome is well-calibrated judgement in an AI-rich world, not AI abstinence.

From criteria to confidence: Empowering students through assessment literacy

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Assessment can either intimidate or inspire. For many learners, general assessment criteria or rubrics function as vague markers disconnected from their work rather than as meaningful learning tools. For tutors, the challenge is equally real: how can we use these criteria not only to assess performance, but to validate and support learning? This paper reviews the growing emphasis across sector standards, regulators, and partner institutions, on not only quality procedures but on learner outcomes, equity, and assessment transparency. It focuses on how criteria are used, understood and taught. Aligning intended outcomes with assessments and inclusive pedagogies reframes criteria as a scaffold for learning rather than an obstacle to clear.

The paper suggests that the following seven general assessment criteria, from the University of Greater Manchester's institutional assessment framework, can serve as learning tools rather than grading instruments alone:

1. Relevance
2. Knowledge and understanding
3. Analysis, creativity, and problem-solving
4. Self-awareness and reflection
5. Research and referencing
6. Written English
7. Presentation and structure

According to research, when these criteria are embedded into curriculum design, feedback strategies and active learning, they help bridge the gap between student understanding and tutor expectations. This paper first investigates why tutors and learners alike struggle to apply and explain assessment criteria. It then reflects on how repositioning these criteria as relational and conversational strategies enhances learning. Lastly, it considers how tutors can build student confidence by embedding co-interpretation, clarity, and student voice into daily practice.

Diagnosing the disconnect: Why criteria often confuse

A key problem is that learners are not introduced to assessment criteria until an assignment is launched, leaving expectations unclear. Research underlines how this limits learners' opportunities to engage with these tools constructively. Introducing criteria early, and teaching students how to apply them formatively, improves opportunities for engagement.

While criteria are meant to clarify standards, they are often encountered as difficult to understand or intimidating, operating more as checklists. Learners may encounter them in assignment briefs or module guides, yet most are unsure how to apply them to their own assignments. Phrasing that involves terms such as 'relevance' or 'critical analysis' can be subject to different interpretations by those from different languages or educational backgrounds. What is missing is coherent, explicit teaching on how criteria link to the actual assignment and how learners can apply them while working on the assignment, not only after submission.

Learners also need opportunities to work with criteria, rather than simply receiving them. Despite potential misinterpretation, tutors may hesitate to discuss the criteria with learners for fear of 'coaching', a tension noted in research as an obstacle to effective feedback practice. This disconnection often appears bigger for learners who already feel marginalised within academic settings. Providing clearer pathways to understanding criteria, and demonstrating their application through authentic examples shifts focus from judgement to progress.

Sector guidance supports this approach. The UK's quality frameworks, including those from the Office for Students (OfS) and the Quality Assurance Agency (QAA), highlight the importance of standards mastery, transparent results, and assessment integrity. Without transparency and clarity, students struggle to navigate unfamiliar standards. Inclusive pedagogies support the use of criteria in everyday teaching, inviting questions throughout the drafting phase and building feedback literacy and student agency. Additionally, a relational approach in the classroom supports belonging and participation, which improve student success.

Reclaiming the criteria: From tick-box to teaching tool

Research shows that when criteria are deployed as a teaching tool rather than only an assessment tool, tutors gain formative advantages and grow student agency. This approach positions criteria as a shared language applied throughout planning, drafting and final assessment.

Relevance concerns the alignment between intended learning outcomes, the task, and the learner's response. In a diverse class, a common challenge is that learners understand the task differently. Making task outcome visible through worked examples, scaffolded activities, and formative check-ins can help strengthen the connection between teaching, exercises, and feedback. In particular, this helps learners who are navigating assessments which are different from any they have previously engaged with.

Knowledge and understanding go beyond recall. They involve contextualising theories, applying them meaningfully, and drawing on credible academic and professional sources. Teaching strategies such as concept maps, case-based discussions, and peer activities allow learners to show their understanding and identify gaps. Such approached are valuable in cohorts with international and mixed ability students where prior knowledge varies.

Analysis is consistently cited as a significant criterion that undergraduates struggle with. Tutors can address this by breaking analytical tasks into micro-skills: classifying, comparing, appraising evidence, and drawing implications. Short analytical activities, such as examining two opposing models, help learners develop their thinking step by step. Embedding such exercises into active learning promotes confidence and makes analysis feel more achievable.

Creativity and problem-solving frequently surface in authentic, applied activities. Case studies, group assessments, and digital storytelling offer opportunities for learners to generate unique insights. These strategies are well supported by relational and inclusive pedagogies, where diversity is integrated, and learners are invited to co-construct meaning, rather passively receive information. Problem-solving activities are especially effective when grounded in real-world situations that encourage originality and autonomy.

Self-awareness and reflection are learnable academic skills, not simply descriptions of experiences. Stephen Brookfield's Four Lenses Framework offers learners an approach to reflect from multiple perspectives. Repeated, low-stakes reflective activities, from formative feedback to group work, help establish reflective habits and reduce anxiety.

Research and referencing can be treated as a technical afterthought, but they are fundamental to critical reasoning and academic integrity. Teaching this criterion effectively is about focusing on how to identify high-quality sources, to use them to strengthen arguments, and to integrate citations smoothly into a text. For example, brief tutorials or VLE-based quizzes on citation ethics embedded within classes can lower the risk of academic misconduct while improving skills around argument quality and source evaluation.

Written English, presentation and structure are not only about communication skills; they reflect clarity of thought. Writing frames such as PEEL paragraphs, peer review for clarity, and sentence starters support the development of academic writing. It is essential to ensure that this scaffolds the development of all learners, and does not disadvantage those from non-traditional backgrounds.

Conclusion: From criteria to confidence

These seven criteria seek to support assessment literacy and culturally responsive teaching in order to promote belonging and widen routes to attainment. This approach to engaging with the assessment criteria transforms them into comprehensible, useful tools which enhance the learning experience of all students.

Indeed, assessment criteria should not remain hidden within the curriculum or be issued merely for compliance. When made visible through adaptive teaching strategies, and embedded into inclusive and co-constructed learning, they become tools to support students in becoming independent learners.

By teaching the seven criteria as skills to develop rather than boxes to tick, tutors can improve both performance and equity. Inclusive, culturally responsive pedagogies promote a sense of belonging and contribute to more equitable outcomes. When these criteria are aligned with learner-centred education, they become a source of confidence. The approaches put forward within this paper offer a roadmap for using assessment not only to measure learning, but to delve deeper into it.

Beyond bans and bots: A self-determination theory approach to academic integrity and generative AI

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Generative AI (gen AI) is no longer a novelty. It has become part of the everyday infrastructure of undergraduates in the UK. According to the Higher Education Policy Institute's (HEPI) recent survey, nearly all students are using AI tools in some capacity to support their studies with little institutional support to use them appropriately. This gap between use and support is a growing issue as cases of AI-related academic misconduct rise across UK universities.

Higher education institutions (HEIs) are responding by reinforcing regulations, revising misconduct categories, and investing in detection. In the last few years, HEIs have begun to prioritise AI literacy, explicit guidance, and assessment designs that engage proactively with generative tools. This shift raises a fundamental question: should AI-related misconduct be treated primarily as a matter of deterrence, or can it be understood as a symptom of deeper motivational conditions within the learning environment?

This paper uses the lens of Self-Determination Theory (SDT) to suggest that partnership is a more sustainable basis for academic integrity in AI-rich contexts than policing alone. It presents SDT as a lens for integrity, examines the limitations of compliance-only solutions, and proposes curriculum and assessment designs that support autonomy, competence, and relatedness.

Why motivation matters for integrity

Self-Determination Theory proposes that people thrive when three basic psychological needs are met: autonomy (a sense of volition and meaningful choice), competence (a feeling of effectiveness and growth), and relatedness (a sense of connection and belonging). When these needs are satisfied, individuals are more likely to internalise shared values and regulate their behaviour in self-endorsed ways. When they are frustrated, compliance tends to be driven by pressure, fear, or avoidance.

A growing body of research applies SDT to academic misconduct. A widely cited study on 'The role of basic need fulfilment in academic dishonesty' shows that students who experienced frustration of autonomy, competence, and relatedness were more likely to engage in academic dishonesty, whereas students whose needs were supported exhibited more autonomous motivation and were less inclined to cheat. With this SDT lens in place, it becomes possible to examine how prevailing compliance and detection centred responses to generative AI can inadvertently frustrate those same needs, and in doing so, risk misdiagnosing the very integrity problem they seek to address.

What current generative AI responses risk getting wrong

Several recent surveys suggest that most students are not primarily motivated to use AI in order to cheat. A 2024 HEPI Policy Note found that over half of students had used gen AI to help with assessments, but only a small minority reported using it to generate unedited text for submission. Similarly, research on ChatGPT and academic integrity suggests that both staff and students tend to view AI tools as compatible with integrity when their use is transparent, guided, and aligned with clear institutional policies.

From an SDT perspective, a purely restrictive approach to gen AI can inadvertently undermine the very conditions that support integrity. Autonomy is threatened when policies are experienced as opaque, arbitrary, or imposed

without student voice, producing compliance driven by fear rather than by shared values. Competence is undermined when students are told to not use AI but are evaluated in ways that implicitly reward AI-like outputs, or when they are left to navigate complex AI tools without structured support. Relatedness is weakened when the dominant institutional message is one of distrust, reinforced by heavy reliance on detection technologies that may misclassify legitimate work.

In contrast, sector level guidance is increasingly pointing towards partnership models. Academic integrity resources from the Quality Assurance Agency for Higher Education (QAA) encourage providers to view integrity as 'an integral part of learning, teaching and assessment practice' rather than a narrow compliance issue. The European Network for Academic Integrity's (ENAI) recommendations on the ethical use of AI in education stress the importance of equipping staff and students with the skills to use AI tools responsibly, embedding AI in learning outcomes and reframing misconduct definitions to encompass unauthorised content generation while normalising declared, ethical use. The Russell Group Principles similarly commit universities to AI literacy, inclusive assessment design, and learning environments 'characterised by trust, dialogue and transparency'.

The challenge for individual institutions and module designers is how to translate these high-level commitments into everyday practice that strengthens, rather than erodes, students' self-determined motivation.

Supporting integrity in AI-rich teaching

SDT offers a practical lens for redesigning academic integrity strategies around the three basic needs discussed above. Rather than asking 'How do we stop students misusing AI?', institutions might ask 'How can we design learning environments in which students do not need or want to misuse AI?'. A useful starting point is to make the SDT needs explicit in curriculum and assessment design using questions such as those shown in Figure 1 below.

SDT need	Integrity-supportive questions for AI-rich teaching
Autonomy	*Where do students have meaningful choice and voice in how they use (or do not use) AI for learning?*
Competence	*How are we explicitly teaching the skills needed to use AI critically and transparently, and to succeed without it when required?*
Relatedness	*How are we building shared understandings of integrity, including co-created norms around AI use, within our programmes and disciplines?*

Figure 1: SDT needs for AI-rich teaching

Supporting autonomy through co-created AI norms. Research on choice provision in academic settings suggests that even modest autonomy-supportive practices, such as offering options in tasks or formats, can reduce attitudes that justify cheating. In the context of AI, this might involve inviting students to help draft module-level 'AI Use Charters' that specify acceptable and unacceptable uses; for example, idea generation versus whole-assignment production. Students might also be given some choice over whether to use AI for particular formative tasks, paired with reflective commentary on what it added or detracted from using AI. Creating space for students to question and refine AI-related rules ensures that policies feel owned rather than imposed. Taken together, these approaches shift AI from a secret, individual risk to a shared, negotiated element of the learning environment.

Building competence for critical and ethical AI use. One recent study shows that students view AI as beneficial for explaining, summarising, and feeding back, but remain concerned about over-reliance, misinformation, and fairness. Competence-supportive practices might include embedding short, discipline-specific activities in which students compare AI-generated outputs with human-produced exemples, identify inaccuracies or biases, and practise appropriate citation of AI assistance. Formative assessments could require students to document their AI use, or deliberate non-use, fostering metacognitive awareness of when AI genuinely supports learning. Staff development is equally important, enabling lecturers to model both productive uses and principled refusals ('for

this task, you must not use AI because..'), rather than defaulting to generic warnings.

Strengthening relatedness through transparent, relational integrity work. Research on academic misconduct consistently emphasises the importance of the student-staff relationship. When students feel known, respected and treated fairly, they are less likely to rationalise dishonest behaviour. In the gen AI era, relatedness can be fostered in several ways. Openly sharing with students the institutional pressures and dilemmas that staff themselves face around AI and integrity, and inviting reciprocal perspectives, can humanise what might feel like a top-down regulation. Case discussions in which staff and students together analyse AI-related scenarios - undisclosed paraphrasing, AI-assisted coding, or AI-generated references – provide opportunities to articulate how integrity values apply in practice. Ensuring that integrity processes, including AI-related misconduct investigations, are experienced as procedurally fair, with clear explanations and opportunities for learning rather than purely punitive outcomes further reinforces a relational approach.

Towards shared purpose

Generative AI exposes the limits of treating academic integrity as a purely procedural or technological matter. Detection cannot keep pace with evolving tools, and students receive mixed messages when AI is both promoted as a study aid and framed as an integrity threat. Self-Determination Theory seeks to recentre integrity on motivation, relationships, and learning. This reframing does not reject rules or sanctions; rather, it argues that policies and penalties are most effective in environments that already support autonomy, competence, and relatedness. In such contexts, students are more likely to internalise scholarly values and engage with AI transparently.

For teaching-focused institutions working with diverse and often highly pressured student populations, this shift from policing to partnership is not a luxury but a practical necessity. As generative AI becomes ordinary infrastructure rather than novel disruption, the most important integrity conversations may be less about banning AI bots and more about the kind of learners, and the kind of universities, we are working together to build.

Adaptive assessment: Impact on postgraduate business students' engagement

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Assessment in higher education (HE) faces persistent challenges, including inconsistent outcomes, retention difficulties, and low student engagement. Traditional assessment approaches repeatedly fail to address the needs of diverse learners, applying uniform standards to all students. Adaptive learning and assessment offer a more responsive alternative, a technological approach to evaluation that adjusts learning activities to achieve more equitable outcomes while accounting for the varied abilities and needs of a student group, personalising tasks and feedback in relation to individual performance rather than assuming all students will progress along the same trajectory.

Adaptive assessment involves active appraisal techniques that adjust question difficulty, provide targeted feedback, and pace tasks in response to student performance in order to support personalised learning. As a course progresses, diagnostic exercises can identify individual strengths and weaknesses of students, enabling net progress. In this way, weaknesses are addressed while strengths are built upon. As higher education institutions (HEIs) worldwide face persistent pressures around academic performance, engagement, and retention, adaptive assessment offers a promising means of addressing these concerns. This paper draws on existing research and practice-based applications to explore how adaptive assessment influences engagement among postgraduate business students.

Assessment in context

In today's rapidly evolving higher education landscape, educators are constantly adapting to changes driven by digitalisation, global disruptions such as the Covid-19 pandemic, and the Fourth Industrial Revolution. The expanse of educational technology, including learning management systems, big data, and analytics, is driving digital transformation across HEIs. This has fostered innovative teaching strategies and increased flexibility, providing cost-effective access to educational resources regardless of geographical location.

Despite these advances, HEIs continue to face challenges regarding student success and throughput rates. Student engagement, encompassing interactions between learners, educators and content, as well as between learners and digital interfaces, remains essential for effective learning, particularly in online or hybrid learning environments.

To ensure that education functions as a meaningful investment, assessment should not be a one-time exercise at the end of a programme but should be continuous in nature. Throughout a programme, students should undertake formative assessments, such as home tasks, class tests, and group assignments, through which feedback can be provided regularly. For example, group assignments offer students direct experience of the contribution that collaborative working and teamwork make to managerial effectiveness, a factor in organisational performance often underestimated. A well-executed formative assessment process can demonstrate student progression towards the target higher-order thinking skills described in Bloom's Taxonomy.

Adaptive learning has gained substantial attention in recent years as a strategy to improve learner satisfaction, engagement, and academic achievement in HE. It applies technology to adapt teaching content, pacing, and support to meet the individual needs and performance levels of learners. A vital feature of adaptive education is adaptive assessment, which dynamically modifies

question difficulty and feedback in response to students' prior performance, and treats evaluation as a continuous process. Indeed, as postgraduate business programmes become increasingly diverse, the demand for personalised and adaptive approaches has become pressing.

Impact on engagement

Adaptive education has transformed learning by tailoring activities to meet individual student needs, proceeding from the understanding that traditional learning approaches often fail to address all students' needs equitably. In large classes particularly, it can be difficult to accommodate the learning pace of every individual. Adaptive learning seeks to address this by adjusting and personalising methodologies to improve learning outcomes.

Research has shown that adaptive assessment fosters strong student engagement, offering timely feedback and tailored challenges that promote learning and improve participation. It has been described as a tool that supports recognition of students' strengths while focusing attention on areas that require improvement, and integrating it with personalised commentary has been shown to encourage motivation and enhance academic attainment. Its purpose goes beyond measuring knowledge retention to assessing the depth of understanding and tracking its development over time, providing a richer picture of student learning than traditional assessment.

Implementation and challenges

The rise of online assessment platforms has made adaptive techniques increasingly feasible, particularly in remote environments and at scale. When integrated into digital platforms, adaptive assessments facilitate continuous monitoring of learner progress and enable timely interventions. Features such as branching questions, immediate feedback, and learner analytics reinforce formative assessment and create a more responsive learning experience. These benefits can be particularly pronounced in postgraduate business education where students typically bring varied professional background and learning needs.

However, the technology alone is not sufficient. Accessibility, planning demands, assessment design skills, and instructional complexity are a few of the barriers to effective implementation. Indeed, success requires intentional alignment between assessment design, technological skills, and clear pedagogical intentions.

Conclusion

Adaptive assessment offers a transformative framework for enhancing student participation and learning outcomes in higher education. Its application within postgraduate business programmes is promising for addressing diverse student needs and supporting retention. Institutes should, therefor, invest in appropriate adaptive tools, provide training for relevant staff, and ensure that assessment design aligns with clear pedagogical objectives.

The influence of AI tools on students' critical thinking abilities

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Artificial intelligence (AI) has become an everyday feature of university life. From organising ideas to making initial assignment plans, AI tools such as ChatGPT are now woven into how students learn and work. As these tools become more powerful, a key question arises: how is AI shaping the way students think?

Cognitive shortcuts and critical thinking

AI is designed to make tasks quicker and easier, exactly what busy students want. It uses machine learning and neural networks to generate answers that sound intelligent and often convincing. However, the very efficiency that makes AI appealing can also discourage deeper engagement.

Recent research has raised concerns about how students use AI in higher education (HE), finding that while 80% of students stated that their institution had an AI policy, only 36% believed they had received proper support to use AI ethically. Many students are aware of academic misconduct risks but continue to use AI tools to speed up assignments. Researchers suggest that AI often works like a 'black box', providing an answer, but not conveying how it arrived at that answer. When students accept these outputs uncritically, they risk losing the necessary thinking skills that higher-level learning demands.

Critical thinking is about questioning, analysing, evaluating, and reflecting, and it is central to what learning and development in higher education. It allows students to distinguish between fact and opinion, recognise bias, and make balanced judgements. Yet, if AI tools provide instant answers, do students still need to wrestle with uncertainty and complexity?

To understand this, it helps to consider psychologist Daniel Kahneman's theory as conveyed in 'Thinking, Fast and Slow'. Kahneman puts forward two systems of thought in his book:

- System 1: fast, intuitive, and automatic.
- System 2: slow, deliberate, and analytical - where critical thinking happens.

AI aligns closely with System 1; it is fast, efficient, and designed to reduce effort, but the danger is that students begin thinking like AI, accepting quick, polished outputs without activating System 2. When this happens, important habits like questioning assumptions or exploring multiple perspectives begin to fade.

What research reveals

Early studies suggest that uncritical AI use might be changing how students engage cognitively. Recently, researchers used brainwave monitoring to compare students writing essays with and without ChatGPT. Those who used AI showed lower brain activity in areas linked to memory and executive control, a phenomenon the researchers called 'metacognitive laziness'. Similarly, another study found that students who relied heavily on AI-generated code accepted it with little revision, showing reduced originality and analytical depth.

In contrast, when students are encouraged to question AI outputs, the picture changes. Research demonstrates that students given metacognitive prompts such as 'pause and reflect on assumptions' asked more critical follow-up questions and demonstrated deeper reasoning. Another study showed that short reflective 'provocations' during AI-assisted tasks helped to restore analytical thinking and self-awareness.

Together, these studies suggest that AI itself is not the problem, rather the issue is how it is used. Without deliberate reflection, AI use can lead to cognitive shortcuts. However, with the right scaffolding, it can instead strengthen metacognition and critical evaluation.

Current study

To explore this further, we are conducting a six-month study at a UK HE institution to examine how AI use relates to critical thinking in university students. The project will use validated survey tools to capture patterns of AI engagement, critical thinking behaviours, and metacognitive reflection. The study seeks to discover how critical thinking is related to AI use in the context of this HE institution. We anticipate that the more extensive the AI use, the lower the level of critical thinking students will show. This will support further work in promoting ethical AI use and critical thinking skills interventions for both students and staff.

We will ask questions such as: How often and for what purposes are students using AI? To what extent are students who rely more heavily on AI less likely to question or critique information? How can deliberate, reflective use of AI enhance critical thinking?

Survey responses will be analysed quantitatively using correlations and regression models to reveal how these factors connect. The study does not seek to discourage AI use, but rather to understand how deep, analytical learning can be supported within the context of AI use.

Using AI thoughtfully

If AI can generate ideas, summarise readings, and even outline essays, the challenge for educators is to keep students mentally active during that process. Recent studies suggest several practical ways to approach this challenge:

- Encourage students to annotate or justify how they have used AI tools.
- Build reflective prompts into assignments, such as, ‘What did the AI miss or misunderstand?’
- Facilitate peer discussions about AI’s role in academic integrity and creativity.

Strategies such as these help ensure that AI remains a tool for thinking, not a substitute for it. Indeed, research shows that guided prompts, as suggested above, can lead to deeper conceptual understanding without reducing autonomy. Another study found that students who received metacognitive feedback from educational chatbots retained more knowledge and reported higher motivation throughout their learning.

Taken together, this suggests that the educational value of AI depends less on the tool itself and more on how it is framed as a tool for education. When AI use is made visible and reflective, it can support sustained cognitive engagement rather than undermine it, reinforcing students’ roles as active agents in their own learning.

Looking ahead

It appears that AI is here to stay, but its growing presence in higher education does not diminish the importance of human judgement. On the contrary, it makes that judgement more vital than ever. As educators, our responsibility is not to resist AI use but to guide students beyond the passive acceptance of AI-generated outputs and towards a more deliberate, critical, and informed collaboration with these tools. When students are encouraged to question, refine, and evaluate AI responses, AI becomes a catalyst for learning rather than a shortcut around it.

Used mindfully, AI has the potential to support the development of the qualities that define higher education: intellectual curiosity, reflective engagement, and rigorous critical thinking. However, this requires intentional pedagogical strategies that encourage students to apply metacognition, ethical awareness, and judgement.

Our study seeks to contribute empirical evidence to this evolving conversation. By examining the relationship between students’ use of AI tools and their critical thinking skills, we aim to contribute practical, research-informed strategies that support reflective, ethical, and independent learning. In this way, educators and institutions may find a balance between technological innovation and the core values of higher education in the digital age.

Rethinking andragogy in the age of large language models

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Large language models (LLMs), the technology underpinning applications such as ChatGPT, Gemini, Copilot and Claude AI, represent one of the most significant technological innovations shaping learning and knowledge practices in the 21st century. A core advancement in deep learning with artificial intelligence (AI), LLMs generate human-like text and code, and can support drafting, summarising, and tutoring. This paper examines the challenges these tools pose for higher education (HE) through the lens of andragogy, defined by educator Malcolm Knowles as 'the art and science of helping adults learn'. Andragogy is particularly well suited as a lens for HE, as it differs from traditional pedagogical approaches designed for children.

There is little doubt that HE is becoming increasingly dependent on these AI tools given their ability to synthesise vast bodies of literature and generate human-like text almost instantaneously. Yet this same capability creates significant challenges. Educators and institutions alike are questioning whether genuine learning is taking place, with growing concern that students are using these tools to complete assignments with minimal engagement in deep learning. These concerns extend to academic integrity and authenticity, as reflected in sector-level discussions by the Quality Assurance Agency (QAA).

Such concerns demand urgent attention. The recent announcement by OpenAI of plans to invest several trillion dollars in further model development makes this issue particularly concerning for the education sector. If students can complete assignments within minutes without achieving the intended learning outcomes, fundamental questions arise about the depth of student learning, reflective engagement, and the broader purpose of HE. This paper suggests that explicitly andragogical strategies are essential if learning is to remain meaningful amid the continued expansion of these tools. Indeed, existing educational foundations are no longer sufficient if these tools allow students to avoid the cognitive effort once required for learning.

Established learning theories under pressure

The rapid integration of LLM-based AI tools into HE places established learning theories under pressure. Frameworks such as constructivism, connectivism, experiential learning, Bloom's Taxonomy, and heutagogy all expect students to actively engage in thinking in order to learn. LLM-based tools disrupt this expectation by providing ready-made answers that reduce the need for students to construct knowledge themselves. In place of the traditional progression from 'learner to knowledge', a new model is emerging that can be described as 'learning + AI to knowledge' in which AI mediates the process through which knowledge is constructed.

Constructivism proposes that learners build knowledge through active engagement with problems, while LLM-based tools now increasingly mediate this process by providing instant explanations, examples, and feedback. Connectivism, which frames knowledge as co-created through networks of people and digital resources, is also disrupted; where students once collaborated with peers and teachers, they are increasingly interacting with AI tools, reshaping these learning networks. Similarly, experiential learning enables students to gain knowledge through a four-stage cycle of concrete experience, reflection, conceptualisation and active experimentation. LLM-based tools challenge this model by offering simulated experiences and ready-made reflections that bypass authentic engagement, and real-world trial and reflection.

Bloom's Taxonomy presents learning as a progression from lower-order cognitive tasks, such as remembering, to higher-order cognitive tasks, such as evaluating and creating. With LLM-based tools, students can generate outputs that resemble higher-order thinking while bypassing foundational learning stages. Heutagogy, defined as self-determined learning, expects students to

undertake self-directed learning. However, when LLMs provide instant answers, students need to do more than find and evaluate information; they need skills to validate AI outputs and exercise reflective judgement.

Case for a new conceptual framework

In the context of rapidly advancing LLMs in HE, there is a growing need to redesign teaching and assessment strategies towards approaches grounded in authentic, accountable and reflective learning. Under traditional practices, reliance on students' final written outputs is increasingly insufficient as evidence of learning, as LLM-based tools can generate plausible academic work without demonstrating conceptual understanding or cognitive engagement. Sector-level guidance from the QAA on generative AI and assessment and UNESCO's work on AI and the future of education, both highlight these growing concerns about assessment validity, academic integrity, and trust in AI-mediated learning environments.

In response, this paper proposes a conceptual framework that reinterprets established learning theories, recognising their continued value while addressing their limitations in an AI-driven HE context, with the aim of supporting learning that remains authentic, meaningful, and future-ready.

PAIRWIDE Framework

In educating the next generation, LLMs should be understood as a contested cognitive partner; tools that students must learn to question, justify, and evaluate rather than passively consume. This requires prioritising skills such as reflection, judgement, and verification that go beyond the uncritical use of AI-generated outputs.

To support this shift, this paper proposes the PAIRWIDE framework for teaching and assessment in the age of AI-driven technologies, PAIRWIDE emphasises eight interconnected principles to advance andragogical practices:

- **Partnership** – Utilising AI as a cognitive collaborator, not as a replacement for human thinking
- **Authenticity** – Employing tasks that require genuine engagement and application
- **Integrity** – Using AI transparently and ethically in assessment
- **Reflexivity** – Reflecting critically on AI's influence on learning
- **Workflow evidence** – Documenting drafts and learning processes
- **Independent demonstration** – Articulating individual understanding
- **Dynamic transfer** – Demonstrating growth and application over time
- **Equity and access** – Creating fair and inclusive AI-supported learning environments

Together, these principles offer a conceptual framework for maintaining the depth, rigour, and authenticity of learning, and for addressing the ways in which AI tools can obscure genuine intellectual engagement.

Enacting the PAIRWIDE framework to enhance andragogical strategies in HE involves embedding visible learning processes, such as drafts and process appendices, alongside process-based and reflective assessment practices. It encourages students to use AI as a collaborator through interrogation and bias awareness, while shifting assessment focus towards learning progression over time rather than solely final products. Such practices aim to strengthen critical, creative, and collaborative capabilities within AI-mediated learning environments.

Concluding thoughts

In summary, this paper has revisited established learning theories and proposed the PAIRWIDE framework as a conceptual response to the challenges and opportunities presented by LLM-based tools in higher education. It emphasises the importance of authentic, process-oriented, and reflective learning to preserve and extend meaningful adult learning in an AI-mediated context. Moving forward, further work is needed to refine and empirically evaluate the framework, and to explore how it can support effective teaching, assessment, and policy in diverse HE settings.

Bridging technology and empathy: Understanding AI in mental health support

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Artificial Intelligence (AI) is increasingly shaping healthcare, offering opportunities to enhance efficiency, personalise interventions, and support mental health care. AI-powered tools, including chatbots, mood-tracking applications, virtual assistants, and adaptive recommendation systems, have the potential to complement human clinicians by providing tailored support, early detection of issues, and structured psychoeducation. These tools can help manage appointments, offer adherence reminders, and deliver guided coping strategies, illustrating the transformative potential of AI in mental health. Furthermore, this paper will present findings and insights from a recent study conducted by the author on "Exploring Bias and Ethical Concerns in AI for Mental Health Support".

Relevant literature highlights both the promise and the challenges of AI in healthcare. AI can improve diagnostics, optimise resource allocation, and support patient care in meaningful ways. In mental health, chatbots and other AI systems can offer low-stakes support for individuals who might otherwise face barriers to accessing care. Yet, AI raises critical ethical and practical challenges. Concerns around algorithmic biases, data privacy, transparency and the preservation of human empathy are essential to trust and understanding for effective care. This is particularly important in mental health applications where patient vulnerability is high.

Indeed, bias in AI systems is a recurring concern; if algorithms are trained on unrepresentative data, they may inadvertently reinforce existing inequalities. In mental health, treating users as "data points" rather than as individuals can undermine agency, trust, and therapeutic outcomes. Although ethical frameworks and principles exist, most research has focused on general healthcare rather than mental health, and there is little evidence on how students and academics—future professionals and key academic voices—perceive bias, ethics, and trust in AI.

Practical strategies to foster equitable AI adoption and trust in real-world settings are still limited. Ensuring AI is implemented responsibly requires more than technological advancement - it requires education, awareness, and active engagement from students, academics, and the wider public.

Study context and research approach

This author recently conducted a study on perceptions of AI in mental health among students and academic staff at a UK higher education institution. The research aimed to understand familiarity with AI-powered mental health tools, attitudes towards their use, perceptions of bias, and ethical concerns. A structured quantitative survey was administered to 114 participants from three different groups: undergraduates, MSc students, and academic staff. A workshop was then delivered to MSc students to explore AI bias and ethics. The student participant groups represented a range of ages, primarily between 25 and 44, and were predominantly female, reflecting the demographics of the institution. This approach provided insight into how emerging professionals such as students, and academics perceive AI, bridging a gap between technical potential and ethical awareness.

Key findings: Perceptions, ethics, and the impact of education

The study's results revealed limited familiarity with AI, with most participants having little or no prior experience using AI-powered mental health tools. MSc students demonstrated slightly higher familiarity than undergraduates, likely due to advanced study and exposure to workshops, while academic staff showed comparatively low familiarity, suggesting that professional experience does not guarantee engagement with emerging AI tools. Across all groups, participants expressed a clear preference for AI as a supportive adjunct rather than a replacement for human therapists. Empathy, clinical judgement, and human oversight were consistently emphasised as essential qualities that AI cannot replicate. Chatbots - Wysa, Youper, MindDoc, TalkLife, 7 Cups, BetterHelp - were seen as useful for specific, low-risk

tasks, but participants remained cautious about relying on AI for complex emotional or therapeutic support.

Bias, fairness, and ethical safeguards were prominent concerns, though there was uncertainty about the extent and prevalence of bias. Participants recognised the potential for AI to disadvantage certain groups, especially if diversity and inclusivity are not carefully considered in algorithm design. Language, dialect, and specific mental health conditions were highlighted as potential areas of inequity. Ethical priorities extended beyond bias, with strong concerns about privacy, data security, and the potential misuse of personal mental health information. Participants emphasised the importance of preventing over-reliance on AI, noting that human involvement remains vital for safe and effective mental health support.

The MSc workshop provided a tangible impact on perceptions. Around 30 MSc students participated in a one-hour workshop designed to raise awareness of AI in mental health, focusing on the meaning of bias, key ethical concerns, and the role of AI in mental health support. The workshop included a presentation and discussion, and students' perceptions were explored using pre- and post-test measures, allowing for comparison of responses before and after the session. Students who were initially unsure or sceptical became more aware of AI's capabilities and potential benefits.

One of the biggest changes was in perceptions of effectiveness. After the workshop, many students who were previously uncertain had a better understanding of how AI could improve mental health support when used for functions such as triage, psychoeducation, and adherence support. There were also gains in how students viewed AI's ability to provide customised support and help with early detection, particularly after demonstrations showing adaptive prompts and language screening. Attitudes towards chatbots improved as students understood the limits and safeguards of these tools, including escalation options and their intended use for coping strategies rather than diagnosis. Confidence in transparency increased slightly, perhaps reflecting an increase in understanding of how users are informed about AI operation, though transparency remained an area of concern.

Comparison between the three participant groups - undergraduates, MSc students (pre- and post-workshop), and academic staff - highlighted meaningful patterns in familiarity, attitudes, and ethical perceptions of AI. MSc students, due to their advanced study, tended to approach AI with a combination of critical awareness and cautious optimism. Undergraduates were curious and open to AI support but had lower familiarity, resulting in tentative expectations. Academic staff maintained a reflective and ethically grounded stance, emphasising human-centred care and the importance of ethical safeguards. Educating participants on AI appeared to reduce extreme opinions, with MSc students moving from uncertainty or scepticism towards a more informed, balanced view of AI's role. Across all groups, there was consensus that AI should complement rather than replace human therapists, and that careful attention to fairness, inclusivity, and privacy is essential.

Discussion and conclusion

Findings from the study resonate with existing literature. While AI has clear potential to enhance mental health support, participants' emphasis on empathy, privacy, and human oversight mirrors concerns raised by scholars. The study also illustrates the role of education in shaping perceptions. Exposure in workshops to concrete examples and discussions about AI's practical applications can foster a more informed, balanced perspective, echoing arguments in favour of AI literacy and ethical awareness. At the same time, participants' cautious approach underscores the ongoing debate: AI has the potential to augment mental health care, but responsible, transparent, and ethically grounded implementation is essential.

Overall, this study highlights cautious optimism towards AI in mental health. Participants recognise its potential benefits while remaining aware of limitations and ethical challenges. Education, transparency, and engagement are key to fostering trust and shaping informed perceptions. While not widely generalisable, these initial findings suggest that AI can be integrated into mental health care responsibly as a complement to human expertise and enhancing support for diverse populations, but only when designed with fairness, privacy, and empathy as central considerations. Only when combined with ethical and human-centred safeguards can AI contribute meaningfully to mental health care alongside the indispensable qualities that human professionals provide.

Understanding academic staff knowledge of wellbeing and disability support

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Supporting student wellbeing and disability needs has become an increasingly urgent priority across higher education. Many students are presenting with more complex mental health concerns, more frequent crises, and rising numbers of undisclosed disabilities. Yet, while institutional strategies place heightened expectations on teaching staff, far less is known about how prepared academics feel to meet these needs.

This emerging gap raises an important question: how do academic staff understand their role in wellbeing and disability support, and what barriers shape their ability to respond effectively?

From institutional expectation to everyday practice

Universities increasingly rely on academic staff to identify distress, provide reassurance, signpost students effectively, and implement reasonable adjustments. Policies often assume a level of knowledge or confidence that may not reflect day-to-day realities, even though academic staff are frequently the first point of contact for students in difficulty.

Academic staff are expected to recognise subtle signs of distress, understand safeguarding thresholds, navigate professional boundaries, and apply disability-related adjustments appropriately. But early qualitative evidence suggests uncertainty is common: staff report blurred role expectations, limited training, and a sense of emotional responsibility that often exceeds their remit. In other words, institutional expectations may not match academic experiences, and this misalignment can have consequences for both staff and students.

Why wellbeing and disability support knowledge matters

The capabilities, confidence, and understanding of academic staff directly shape student outcomes. When staff lack this knowledge, students experiencing mental health difficulties or disability-related barriers are more likely to delay disclosure, disengage from learning, or fail to access specialist support until problems escalate. In these situations, academic difficulties are often misinterpreted as lack of motivation or ability, rather than as signals of unmet support needs.

When staff feel underprepared, several risks emerge, including delayed signposting to specialist support, inconsistent application of reasonable adjustments, and increased staff anxiety and emotional fatigue. These risks have tangible consequences; delayed or inadequate responses can contribute to worsening student wellbeing, reduced academic performance, and increased rates of withdrawal or interruption of study. For staff, uncertainty about how to respond appropriately often leads to emotional overload, fear of making mistakes, and blurred professional boundaries. Given that wellbeing and disability support are central to inclusive, high-quality teaching and learning, it is essential that staff are equipped to provide such support to a high standard.

Wider benefits of well-supported academic staff

When support is delivered effectively, students are more likely to feel safe to disclose difficulties, to engage consistently with their studies, and to develop a sense of belonging within the academic community. This benefits not only students with diagnosed disabilities or mental health conditions, but also those experiencing temporary distress, caring responsibilities, or other undisclosed challenges that affect learning.

For staff, clear knowledge and confidence in wellbeing and disability support reduces uncertainty and emotional strain, enabling more sustainable academic–pastoral boundaries and more consistent teaching practice. At an institutional level, effective support contributes to improved retention, progression, and attainment, while reinforcing trust in the institution's commitment to inclusion and student wellbeing.

In the longer term, inclusive educational environments

help prepare graduates who are more resilient, engaged, and able to participate fully in professional and civic life, extending the impact of wellbeing and disability support beyond higher education into wider society.
Without sufficient knowledge, institutional policies and support services cannot operate effectively at the point where students most often seek help: the classroom and the academic–student relationship. In this sense, staff knowledge acts as the bridge between institutional commitment to inclusion and students' lived experiences of support.

From a theoretical standpoint, this work connects with frameworks of inclusive pedagogical practice, pastoral-academic role negotiation, and staff psychological readiness. Student belonging, academic engagement, and progression are all influenced by how supported and understood students feel. Academic staff, therefore, play a pivotal role in shaping not only learning outcomes, but also students' willingness to remain engaged and persist through periods of difficulty.

Existing research helps explain why staff knowledge and confidence in wellbeing and disability support are so consequential in practice. Research shows that lecturers and academics in higher education often struggle with unclear boundaries between pastoral and academic roles, uncertainty about institutional procedures, emotional strain linked to student disclosures and a lack of training. For example, in one study, 70% of staff had received no mental health awareness training. Many studies focus on public universities and specific disciplines such as Health and Social Care, and far less is known about the perspectives of academic staff working in private higher education providers. This represents a clear research gap that the current study aims to address. Safeguarding awareness - a key component of staff responsibility – is also under-explored despite being consistently highlighted as important across the HE sector.

Our Study

This six-month mixed methods study will investigate how academic staff understand, interpret, and navigate their responsibilities in supporting student wellbeing and disability needs. A survey co-designed by a chartered health psychologist and the Head of Student Support at a private UK HE institution will be used to collect data on staff knowledge, confidence, and preparedness. By situating these findings within the context of a private higher education provider, the study offers insights that are often absent from sector analyses dominated by public universities. Private institutions frequently operate with different funding models, staffing structures, student demographics, and accountability pressures. Examining how these factors shape practice adds nuance to sector-wide discussions about policy, equity, and pedagogy, and sheds light on whether widely promoted approaches translate effectively across diverse institutional contexts.

Academic staff can benefit from structured support in navigating wellbeing and disability responsibilities. Emerging evidence suggests that confidence and competence can be strengthened through targeted continuing professional development (CPD), closer collaboration between academic and support teams, and reflective spaces in which to share best practice. Our study aims to identify which of these approaches are most relevant and necessary within a private UK HE institution, ensuring that staff development is both evidence-based and context-specific.

Looking Ahead

Wellbeing and disability support are integral to the future of inclusive higher education, not simply as an add-on but as a core component of teaching, learning, and student success. Sustainable change, however, requires institutions to understand the competing demands and emotional labour experienced by academic staff. Without this insight, policies risk being aspirational rather than workable in everyday practice.

This project will generate empirical evidence to inform the design of CPD pathways, safeguarding provision, mental health training, and inclusive teaching practices that are both practical and achievable. Findings will help identify where staff feel confident, where uncertainties remain, and what forms of guidance or collaboration are most valued. Ultimately, this study will take a step towards closing the gap between aspiration and reality as it seeks to ensure that academic staff, who are often students' first points of contact, feel equipped and confident to support students.

Belonging beyond words: Engagement and identity in second language learning

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In an increasingly globalised higher education landscape, learning a second language is not only an intellectual task but also an emotional and social journey. Research consistently shows that engagement and belonging are central to language learning success, motivation, persistence, and wellbeing. Yet many educational settings still treat language acquisition as a cognitive process, something that happens inside the head rather than within communities and relationships.

These authors' ongoing research explores how engagement and belonging influence second language learning among international and widening participation students in UK higher education. Drawing on psychological and sociocultural theories, we are investigating how motivation, identity, and classroom dynamics intersect to support or inhibit learning in multilingual environments.

Engagement as a human drive

At the heart of engagement lies human motivation. Self Determination Theory explains that people thrive when three basic psychological needs are met: autonomy, competence, and relatedness. When these needs are satisfied, learners tend to experience intrinsic motivation, learning for enjoyment and personal growth. When thwarted, they become anxious, disengaged or demotivated. Studies in second language learning echo this pattern. Researchers found that autonomy-supportive teaching predicts higher engagement and persistence among university students, while another study reported that positive emotional engagement enhances performance and wellbeing.

However, cultural context matters, and autonomy may have different meanings in different settings. For example, in collectivist societies, decision-making may be experienced as shared rather than individual. This nuance reminds educators that motivation theories, while useful, must be interpreted through the lens of culture.

Language, identity and power

Motivation is never purely psychological. Indeed, Bonny Norton's theory of investment reframes language learning as a social act tied to power and identity. Learners invest their time and effort into acquiring a language when they see proficiency in that language as a route to belonging and recognition. However, if they are positioned as outsiders, 'non-native' or 'deficient', their investment can diminish.

This tension mirrors Pierre Bourdieu's notion of linguistic capital, in which some ways of speaking carry more social value than others. In multilingual classrooms, students often navigate competing identities. Whether the classroom environment validates or marginalises these identities determines how motivated learners remain. Building on Vygotsky's sociocultural theory, research suggests that learning can be understood as participation in communities of practice. In this way, knowledge is co-constructed through dialogue, collaboration, and cultural exchange. Belonging to such a community gives language learners not only fluency but also a sense of identity and purpose.

Emotion and resilience in the multilingual classroom

Emotion is the implicit catalyst that shapes how we attend, interpret, and learn. The Affective Filter Hypothesis posits that stress and anxiety act as barriers to processing language input. Students who fear judgement or exclusion may disengage long before ability becomes an issue. More recent work in positive psychology reframes emotion as a resource. Research highlights that enjoyment, curiosity and wellbeing foster resilience and engagement. In our research, students frequently describe a 'safe classroom

climate' as crucial to their progress. Feeling understood by tutors and peers gives them the courage to speak, make mistakes and grow.

These findings underscore that emotional safety is not an optional extra; it is an educational necessity. When students feel they belong, their brains and hearts align towards learning.

From research to practice

Bridging theory and practice means humanising pedagogy. Engagement cannot be enforced through assessment design alone; it must be nurtured through relationships and trust. To this end, educators can support learners by:

- Fostering autonomy and offering meaningful choices in tasks and topics.
- Building relatedness through peer collaboration and shared goals.
- Acknowledging diversity as an academic strength, using translanguaging and culturally responsive materials.
- Encouraging reflection on learners' future selves, as understood through a Motivational Self System, in order to connect current effort with long-term aspirations.

At an institutional level, inclusive policies are essential. The Higher Education Statistics Agency reported that nearly 680,000 international students studied in the UK in 2023/24, around a quarter of the total student population. Many navigate complex linguistic and cultural transitions while also managing financial and social pressures. Belonging, therefore, must be designed into the fabric of higher education, not left to chance.

Present study

These authors' study aims to explore what influences second language learning of students (both UG and PG students from international and widening participation backgrounds) using mixed methods (quantitative surveys and interviews) to uncover outcomes and processes (facilitators and barriers) related to second language learning and acquisition.

The project will integrate quantitative measurement of psychological needs satisfaction with qualitative exploration of lived experiences. This can help to ensure that factual information is understood alongside qualitative insights from students about second language acquisition, belonging and motivation. The study sample will be around 100 students, who will be recruited online and in person.

Towards a human-centred model of language learning

Second language learning is a fundamentally human process, shaped by social interaction, emotional experience, and cultural context. Engagement and belonging are not secondary outcomes of teaching; they are its foundation. When learners feel competent, autonomous and connected, their motivation flourishes. When they are isolated or undervalued, it fades.

Language classrooms are microcosms of our globalised world. They are places where identity, culture, and aspiration meet. Building belonging within them is not merely a pedagogical task but an ethical one. As higher education continues to internationalise, ensuring that every student, regardless of background, feels seen, heard and supported becomes both a scholarly and moral imperative.

Our ongoing research work aims to provide a framework for identity-sensitive and inclusive language teaching in higher education. By integrating psychological insights with sociocultural awareness, we hope to contribute to a more equitable model of language learning, one that recognises students as whole people rather than test scores. Ultimately, belonging is not just about feeling welcome; it is about having a voice. Language learning gives students the means to express that voice across cultures. The role of educators is to ensure that every learner has the confidence and community to use their voice.

Bridging research and practice: Dyslexia identification and support in higher education

Emma Buhtina, Head of Student Support

Dyslexia continues to be one of the most frequently encountered yet least consistently understood learning differences within higher education. Despite widening participation and enhanced access to support, many learners remain undiagnosed or under-supported, often until late in their academic journey. Indeed, research argues that delayed identification can erode confidence, restrict attainment, and limit opportunity.

As Head of Student Support and Deputy Safeguarding Lead at Regent College London (RCL), my professional focus lies in translating policy and research into practice that improves the lived experiences of students. Alongside leading the College's Access and Participation Plan and Mental Health Charter commitments, I am completing professional accreditation in the specialist teaching and diagnostic assessment of learners with Specific Learning Difficulties (SpLD). On completion, this qualification will allow me to diagnose dyslexia in both children and adults, strengthening RCL's internal capacity for early identification and evidence-based intervention.

This paper examines how research-informed diagnostic work and professional reflection can be integrated to enhance institutional understanding of dyslexia. It argues that genuine inclusion depends not merely on compliance with regulation but on a culture of confident, research-literate educators.

Understanding dyslexia within UK higher education

The British Dyslexia Association estimates that around 10% of the UK population is affected by dyslexia. Yet many learners in higher education are unaware of their profile, or they struggle to navigate the processes required for formal assessment. Research demonstrates that dyslexia is rooted in differences in phonological processing, working memory, and information retrieval, rather than overall cognitive ability. The misconception that dyslexia equates to low capability remains widespread and damaging.

The Equality Act 2010 establishes the duty of higher education providers to make reasonable adjustments, while the SpLD Assessment Standards Committee (SASC) and Joint Council for Qualifications (JCQ) outline the evidence base for diagnostic validity. However, sector policy alone cannot address the affective dimension of learning. Research notes that undiagnosed dyslexic students often experience anxiety, perfectionism, and self-criticism that inhibit academic performance.

At Regent College London, our diverse student community includes a higher-than-sector-average proportion of mature learners, alongside students from a wide range of linguistic and educational backgrounds. This institutional profile requires a sophisticated and empathetic approach to dyslexia identification and support, as many students return to education with long-standing, previously unrecognised learning differences. Research-informed assessment and professional training are therefore central to advancing inclusive practice at RCL.

Inclusive practice matters because it directly shapes student retention, attainment, and wellbeing, particularly for learners whose educational trajectories have already been disrupted or marginalised. Literature shows that when dyslexia goes unrecognised, students often internalise difficulty as personal failure, leading to anxiety, disengagement, and withdrawal from study. Research-informed inclusive practice reframes these difficulties as differences rather than deficits, enabling students to access learning on an equitable basis and to participate with confidence. At an institutional level, inclusive practice moves support from reactive adjustment to proactive design, embedding fairness, accessibility, and academic rigour within everyday teaching and assessment.

Insights from diagnostic research and practice

As part of my specialist training, I have been trained to administer and interpret comprehensive diagnostic assessments using a wide range of psychometric tools, including the Tests of Dyslexia (TOD), Comprehensive Test of Phonological Processing (CTOPP-2), Wide Range Achievement Test (WRAT-5), Detailed Assessment of Speed of Handwriting (DASH), Advanced Reading Test (ART), and additional measures of working memory and processing speed. Under supervision, I have engaged in the assessment process and the interpretation of quantitative and qualitative outcomes.

While the quantitative outcomes are critical for diagnostic accuracy, the qualitative dimension remains equally revealing. Observing how a learner interprets instructions, manages sequencing, self-corrects, and reflects on their performance provides invaluable insight into their cognitive style and resilience. It is within this interpretive space that assessment becomes both scientific and human, an act of analysis and empathy that recognises the individuality of each learner's profile.

Researchers describe the psychological burden of unidentified dyslexia as a process in which learning difficulties are internalised as personal inadequacy rather than recognised as difference. This burden is particularly evident in qualitative reflections gathered during supervised diagnostic assessment training. One adult learner reflected, "I always thought I was just slow." Another noted, "Being diagnosed changed everything; it made sense of years of frustration." These anonymised accounts illustrate how late identification can shape self-concept, confidence, and emotional engagement with learning.

Current research on dyslexia and self-esteem supports these observations, stating that early, compassionate identification significantly improves student retention and wellbeing. Indeed, my own diagnostic practice consistently echoes this evidence. Across supervised assessment sessions with adult learners in higher education, I have repeatedly observed the profound relief and renewed motivation that follow accurate identification and carefully explained outcomes.

For example, during one assessment, an adult learner presented with marked anxiety from the outset, apologising repeatedly for their pace of working and expressing concern that they were "holding things up." When completing timed reading and processing tasks, they frequently paused mid-response, sought reassurance, and attempted to abandon answers prematurely under perceived pressure. Comparable patterns were observed in a second case. Although this learner demonstrated strong verbal and abstract reasoning abilities, they exhibited marked distress when tasks required rapid retrieval. The discrepancy between cognitive competence and emotional response suggested that slower processing speed had been internalised as personal inadequacy rather than recognised as a cognitive difference. This pattern underscores the extent to which unidentified dyslexia can shape not only academic performance, but learner identity and emotional regulation within evaluative contexts.

Following feedback sessions in which assessment results were explicitly linked to dyslexic processing profiles, both learners demonstrated immediate shifts in affect and engagement. Anxiety visibly reduced, task avoidance diminished, and learners became more willing to discuss their learning histories and needs. One learner described the assessment as enabling a coherent understanding of long-standing academic frustration, while another reported feeling able to re-engage with academic study without the same level of self-criticism. These experiences illustrate that diagnostic assessment functions not only as a technical process, but as a relational and educational intervention in its own right. Accurate identification, when accompanied by clear explanation and compassionate framing, can reshape learners' self-concept, restore confidence, and re-open pathways to meaningful academic engagement.

Developing institutional competence through research

Through this approach, I move beyond awareness-raising towards measurable institutional change. These insights directly inform the design of staff guidance, professional development activity, and institutional processes within student support and academic services. When academic and professional services staff share language, understanding, and confidence, inclusion becomes embedded within everyday teaching practice rather than reliant on specialist intervention.

Institutional confidence in supporting dyslexic learners develops through deliberate alignment between policy, professional services, academic practice, and staff development. At Regent College London, this confidence is shaped not only by research activity but by an established institutional infrastructure that includes a dedicated wellbeing and disability support team, clear processes for disclosure and reasonable adjustments, and ongoing collaboration between academic and professional services staff.

Within this context, I am conducting a mixed-methods research project investigating academic staff confidence and competence in supporting student wellbeing and disability, which provides an additional evidence base for institutional development. The study sits alongside existing support mechanisms, including disability support plans, referral pathways, and guidance for teaching staff, and examines how confidently and consistently these are understood and applied across disciplines.

Quantitative surveys and qualitative focus groups are currently exploring patterns of staff confidence, pedagogical understanding, and engagement with institutional processes. The findings will inform targeted professional development for academic staff, strengthening alignment between policy intent and everyday teaching practice. Through this integrated approach, institutional confidence is built not through isolated initiatives, but through a coherent system that enables staff to respond to dyslexic learners with clarity, consistency, and empathy.

Looking forward

Completion of the specialist teaching and diagnostic assessment of learners with Specific Learning Difficulties (SpLD) will enable me to administer formal diagnostic assessments for both children and adults, extending the application of evidence-based educational practice across sectors. Insights emerging from my current research will underpin a college-wide framework for the development of academic colleagues in this area, translating data-driven analysis into sustainable improvements in teaching, learning, and institutional policy.

I intend to share this work through a range of professional and academic forums, contributing to current debates on neurodiversity, cognitive learning processes, and inclusive pedagogy. These contributions will advance sector understanding of how evidence-informed practice can reshape academic culture and strengthen educational outcomes.

Finally, inclusion begins with intellectual curiosity and critical engagement with research, but it is enacted through collaboration, staff development, and reflective practice. Inclusion is not achieved through awareness alone, but through educators working collectively to apply evidence in ways that shape teaching, assessment, and student support. When learner diversity is embedded as a marker of academic excellence rather than treated as an exception, higher education can shift from reactive adjustment to transformative innovation.

Wellbeing and resilience in academia: A holistic approach to sustainable academic practice

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Academics often juggle different roles and responsibilities across their teaching and research objectives and this can lead to lower levels of mental and physical wellbeing. This often presents as reported high levels of stress and burnout. In recent years there has been a focus on better understanding what contributes to staff wellbeing and what can reduce the impact of stress which may ultimately lead to burnout.

Within the academic/researcher context, wellbeing relates to intellectual fulfilment, work-life balance, resilience, purpose and meaning. Intellectual fulfilment involves maintaining curiosity and passion for discovery throughout your career, while work-life balance reflects the ability to find harmony between research demands and personal life. Resilience is reflected in the capacity to cope effectively with workloads, uncertainty, rejection, and setbacks. Underpinning these dimensions is a sense of purpose and meaning which is determined by a clear sense of why your work or research matters.

This paper examines wellbeing through a more integrative and holistic conceptual lens drawing on the Functional Medicine Model and Self-Determination Theory. By situating wellbeing in academia within a whole-system framework, the paper explores how psychological, physiological, lifestyle and organisational factors interact to influence stress and wellbeing over time. It considers how to embed sustainable academic practices which can support resilience and the ability to better manage and adapt to rapidly changing landscapes in the sector.

An integrative health framework to explore wellbeing

Wellbeing and burnout have mainly been explored through the occupational health, psychological and organisational lenses. These perspectives have advanced our understanding of wellbeing, resilience and burnout. However, they often remain conceptually siloed and give limited attention to the embodied and cumulative effects of stress across multiple domains of functioning. To operationalise a more holistic perspective, this paper explores wellbeing through a whole-system perspective, applying the Functional Medicine Matrix (FMM) and Self-Determination Theory (SDT) as conceptual lenses.

The Functional Medicine Matrix (FMM) offers a holistic and integrative clinical framework of healthcare. It is used to understand how multiple factors contribute to health and disease. It is commonly applied in patient care to explore the relationships between biological systems, lifestyle factors, and psychosocial influences, with the aim of addressing root causes rather than isolated symptoms. Although FMM has been mainly applied to clinical practice, its holistic perspective is useful as a conceptual lens as it recognises the interconnected physical, mental, emotional and meaning-based dimensions that influence overall health and wellbeing. In the context of academic/researcher wellbeing the principles are useful when thinking about the range of biochemical, psychosocial, work and lifestyle factors which collectively may contribute to burnout due to long-term stress.

In keeping with this, evidence identified interrelated themes including career insecurities, performance pressures, work-life conflict, social support and unequal access to resources which highlight the multi-dimensional nature of academic/researcher wellbeing and the possible limitations of a single-lens approach. Multiple themes highlight the need for both individual and institutional approaches to support health and wellbeing in academia.

Motivation and resilience

Self-determination theory (SDT) provides a useful framework for understanding how motivation and resilience relate to optimum wellbeing. SDT highlights how managers can create autonomy supportive environments,

as well as how staff can support themselves in ensuring their own basic psychological needs are satisfied and that wellbeing is experienced in a more holistic way. Basic psychological needs are autonomy (being able to make choices), relatedness (being able to connect with others) and competency (achieving goals and ambitions).

An autonomy supportive environment is one in which individuals are provided with meaningful choice, feel supported in developing competence, and experience a sense of connection with others. If an autonomy supportive environment is provided, people will be satisfied in terms of basic psychological needs. Conversely, if a controlling environment is provided, psychological needs will be frustrated and undermine wellbeing.

SDT also distinguishes between autonomous and controlled forms of motivation. Autonomous motivation is driven by internal factors such as self-concept and self-esteem, whereas controlled motivation is driven by external factors such as rewards or fear of punishment. Research consistently demonstrates that autonomous motivation is associated with more sustained engagement, higher quality performance, positive affect, and longer-term behaviour change. SDT therefore highlights the importance of both organisations and individuals in creating environments which enable a holistic approach to stress management, wellbeing and resilience.

Recognising burnout

When stressors are left unchecked this can lead to burnout. Stressors unique to academia can include a "Publish or perish" culture, grant competition, teaching loads, and emotional labour associated with education and career uncertainty. Burnout is often described as a gradual process rather than a sudden event. The 12-stage model of burnout highlights how overcommitment, neglect of personal needs, and escalating stress can progressively erode wellbeing over time.

Burnout presents with three key dimensions: exhaustion, cynicism and reduced effectiveness. Exhaustion feels insurmountable and breaks do not help in energy recovery. Cynicism leads to emotional and mental detachment, a loss of meaning and purpose, and persistent negativity. Reduced effectiveness leads to lack of focus, poorer quality of work, performance and achievement.

The impact of unchecked stressors can be detrimental across FMM domains, affecting biological systems (e.g., neuroendocrine and immune functioning), lifestyle behaviours (e.g., sleep and nutrition), psychosocial context (e.g., relationships and work demands), and meaning and purpose. Institutionally, this translates into long-term sickness absence, reduced productivity and staff attrition. Recognising burnout as a systemic and embodied process creates space for earlier intervention and more integrated approaches to prevention.

Strategies for sustainable practice

Sustainable academic practice requires integration of motivational and physiological perspectives. SDT explains how autonomy, competence and relatedness support psychological resilience, while the FMM highlights how stress is embodied across biological, behavioural and psychosocial systems. Together, these frameworks emphasise that both motivational climate and health behaviours must be addressed to prevent burnout. The approach for supporting staff and reducing/preventing burnout therefore needs to be personalised as this may differ from one person to the next, and can require intervention at both the institutional level and individual level, through personal or professional communities.

Conceptually, SDT maps onto the FMM domains by highlighting how psychological needs interact with embodied systems. Autonomy relates to meaning and organisational context, as a sense of control over work practices influences perceived purpose and stress appraisal. Competence aligns with behavioural and cognitive functioning, influencing engagement, productivity, and self-efficacy. Relatedness maps onto psychosocial systems, including social support, mentoring relationships, and collegiality. Chronic frustration of these needs can contribute to physiological stress responses

captured within the FMM biological systems domain, illustrating how motivational climates become embodied over time.

At an individual level and working within the FMM, coping strategies should adopt a holistic approach that recognises the interconnection between physical health, emotional wellbeing and work practices. This includes good nutrition to support healthy physiological functioning, accessing mental health and emotional support where needed, prioritising good quality sleep, engaging in appropriate exercise or movement, and setting clear boundaries to help protect work-life balance.

Additionally, relationships are equally important to reduce isolation and increase connection and community peer support. This may include seeking mentors, coaches or peer groups which can support alignment with purpose, meaning and fulfilment. Identifying when support and additional interventions are required through the workplace or in the personal space are critical to avoiding burnout. Self-reflection through use of a journal can be a powerful tool in first early intervention and then recovery from the effects of stress and burnout.

This integrative approach highlights actionable targets for intervention at multiple levels, including individual health behaviours, motivational climates, and organisational structures, thereby shifting wellbeing from a reactive to a preventative agenda.

Practical recommendations

Translating SDT and FMM into practice requires structural as well as individual change. At an institutional level, autonomy-supportive leadership can reduce burnout risk by enabling meaningful choice, transparent communication and participatory decision-making. Workload models, promotion criteria and performance metrics should align with sustainable expectations rather than chronic overextension. Embedding wellbeing into organisational culture, rather than positioning it solely as individual responsibility, is critical.

For example, institutions could implement transparent workload allocation models that recognise pastoral and administrative labour, formal policies limiting out-of-hours communication expectations, and promotion criteria that value teaching quality, mentoring, and wellbeing leadership alongside research outputs.

When institutional practices support autonomy and fairness, and individuals are enabled to care for their physiological and relational wellbeing, resilience becomes a shared responsibility rather than an individual burden.

Conclusion

This paper has considered a more integrative approach to understanding wellbeing and resilience in academia, and recognised burnout as the outcome of cumulative and interacting stressors rather than isolated pressures. By using the layered lenses of SDT and the FMM, the paper highlights how motivation, health behaviours, psychological strain, physiological imbalances, and organisational context intersect to shape academic wellbeing over time. In this way, we move beyond individualised or single lens explanations of burnout and instead frame wellbeing as a dynamic, whole-system experience.

Supporting sustainable academic practice therefore requires attention not only to organisational environments and practices, but also to how individuals experience autonomy, competence, connection, and meaning of work. Though the academic sector is experiencing many challenges currently, integrative frameworks offer a practical route to helping academic staff remain engaged and resilient while reducing long-term burnout risk.

Exploring childhood vaccination decision making among Black and South Asian parents in the UK

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Childhood immunisations are widely recognised as one of the most significant achievements in public health, contributing to the drastic reduction and, in some cases, elimination of life-threatening diseases such as polio. In England, the National Health Service (NHS) operates a comprehensive childhood immunisation schedule beginning at 8 weeks of age and continuing through adolescence.

Despite established initiatives and strong public health guidelines, vaccination rates have been declining in recent years, particularly following the Covid-19 pandemic. For example, uptake of the first dose of the Measles, Mumps and Rubella (MMR) vaccine fell to 83.9% in 2023-2024, the lowest level recorded since 2009-2010, raising concerns about population-level vulnerability. The UK lost its measles-free status in 2018 due to a resurgence in cases, reflecting a worrying decline in vaccine coverage. This trend has continued, with 2,911 laboratory-confirmed measles cases reported in 2024, including one death during this period. Other routine childhood vaccines have also seen a decline in uptake, with significant disparities observed across ethnic groups, socioeconomic status, and geographic regions.

Vaccine hesitancy

Vaccine hesitancy is not a new phenomenon, as the World Health Organization (WHO) recognised it in 2019 as one of the top ten threats to global health due to its potential to undermine progress in reducing vaccine-preventable diseases. Coupled with recent international events, widespread media attention, and increasing political discourse around health autonomy and misinformation, vaccines have become highly contested within both public and online spaces.

Declining vaccination rates in the UK, where vaccines are freely available through the NHS suggest that improving access and supply alone is insufficient. Data from the UK Health Security Agency (UKHSA, formerly Public Health England) indicate that in 2023-2024, coverage for the 6-in-1 vaccine by a child's second birthday was 92.8%, while first-dose MMR coverage (MMR1) stood at 88.6%. Although uptake slightly increases by age five, coverage for all childhood vaccines remains below historical peak levels and falls short of the WHO's 95% target required to achieve herd immunity. Herd immunity protects those who are too young or medically unable to be immunised, making high coverage rates critical to safeguarding the wider population.

Furthermore, vaccine refusal and under-vaccination (less than 95% target for any vaccination) are unevenly distributed across England. Emerging evidence shows that declines are most pronounced among ethnic minority (global majority) populations, particularly Black and South Asian communities. These same communities often experience higher incidences of vaccine-preventable diseases, greater health inequalities, and longstanding mistrust towards government and healthcare institutions. Research suggests that parents from these groups face distinct barriers, including historical mistrust, misinformation, and limited culturally tailored communication.

This study

Understanding these perceptions and decision-making processes is therefore crucial to improving vaccine confidence, to informing culturally sensitive interventions, and ultimately to reducing inequities in uptake. Therefore, these authors designed a qualitative research study to explore how parents of Black and South Asian

backgrounds in the UK perceive childhood immunisations, what shapes their decisions, and how trust, culture, and information influence their choices. Insights from this study aim to inform more inclusive and responsive vaccine communication strategies and contribute to ongoing public health efforts to address disparities in immunisation coverage.

The main objectives of the research study were:

- To explore how Black and South Asian parents with children aged 1-5 years in the UK navigate decisions about childhood vaccination.
- To identify the contextual, cultural, and social factors influencing vaccine acceptance, delay, or refusal.
- To inform the design of community-aligned interventions and communication strategies that support and promote childhood vaccine uptake.

Collaborative research team

Based at a UK higher education institution, this research project adopted a collaborative approach between two senior lecturers from Black and South Asian heritage and a Master's degree student with the aim of capacity building and mentorship. A Level 7 MSc student was recruited to join the research team as a research assistant and received structured training and guidance from the project leads on qualitative research design, interviewing, and transcription. Through this process, she gained practical experience in managing and transcribing qualitative data, contributing to both the rigour and depth of the project's analysis.

The student has since completed her MSc and graduated from the College, but the professional relationship has been maintained as part of an ongoing commitment to supporting early-career researchers and fostering a culture of shared learning and collaboration.

Recruitment and data collection

Participants for this project were recruited via an e-poster using social media, campus level e-communications and a poster advertising the project on campus noticeboards. From the 215 expressions of interest received, we screened for the basic criteria and suitability and conducted interviews with 17 participants of Black and South Asian origin. The interviews averaged 27 minutes in length. Of the participants, 13 were female and 4 were male; 13 identified as Black African and 4 as South Asian.

The 17 in-depth interviews were transcribed verbatim by the research assistant under guidance from the two lecturers leading the project. The data were analysed using a six step thematic analysis framework, which provided a systematic approach to identifying and interpreting key patterns within the narratives. Both NVivo software and manual coding were used to organise and label the data, ensuring transparency and cross-validation of findings. Through this iterative process, three overarching main themes developed, reflecting participants' experiences and perspectives on vaccination decision-making.

Findings of the study

Overall, the three main themes depict a strong and organised childhood vaccination system in the UK and the need for healthcare professionals to engage in culturally sensitive dialogue as a way to improve confidence and increase childhood vaccination uptake.

The first theme is about how parents 'weigh the pros and cons' of vaccinations as it was evident from the conversations that the decision-making process about childhood vaccinations for these parents was a deliberative and negotiated process. Most participants felt the need to personally seek extra information using web searches and online chat groups/community forums as they felt uncertain. The participants in this study actively pursued and gathered information to clarify their doubts and then shared them with their partners and other parents.

The second theme of 'one size does not fit all' was developed from three sub themes that highlighted the importance of identifying and meeting the different

informational needs of communities; how those different needs connect to developing trust in the health care system; and how participants would prefer the system to respond to these needs. Therefore, this theme focuses on systemic issues and cultural sensitivity when information is presented to ethnic minority parents.

The third theme of 'a storm' is built upon two sub themes around participants' previous experiences with vaccinations and support from significant others, which can be understood as facilitators to strengthen parents' decisions taken to vaccinate their children. Participants in this study identified this vaccination experience as 'a storm' that will pass, referring to previous experiences with their older children or to relevant support from family and friends acting as a protective factor against the effects of such a 'storm'.

Additionally, findings noted a need for enhanced communication on side effects and any other consequences. As one participant suggested, there could be workshops for new parents with open discussions about myths, doubts and fears about vaccinations as those play a role in vaccine hesitancy.

Reflections

This project enabled us to develop our qualitative research skills and provided an opportunity for a student to gain valuable experience in conducting research. Involving the student as a research assistant not only strengthened project delivery but also provided meaningful mentorship and hands-on research experience. Early and structured project planning was equally important, and a simple project tracker helped the team monitor progress, allocate responsibilities, and stay organised. Practical tools such as Microsoft Bookings and Teams streamlined communication by automating scheduling, reminders, and participant management. These digital supports reduced administrative burden and allowed the research team to focus on engagement and data quality.

A challenge for the project, however, was the increasing presence of 'potentially non-genuine participants' during online recruitment. Some individuals attempted to take part despite not meeting the inclusion criteria. To address this, we recommend careful verification of participants and caution use of incentive-related language on recruitment materials. Guidelines and training around research integrity and handling potential non-genuine research participants in online research are also recommended for researchers.

As a final reflection, designing and conducting this project as researchers with Black and South Asian heritage has allowed us to understand the specific and emerging issues within these communities while simultaneously assessing our own prejudices and assumptions about vaccine hesitancy in these communities.

In conclusion, the findings of this research highlighted that vaccine hesitancy cannot be understood solely as a knowledge deficit but as a negotiated process shaped by emotion, experience, and parental duty of care towards children. Strengthening communication between healthcare professionals and communities, particularly through culturally sensitive dialogue, remains key to improving confidence and uptake.

Importantly, parents' questions and hesitations often stem from care and responsibility rather than rejection or indifference. Many recognise the benefits of vaccination but still hold unanswered questions about potential side effects and long-term health impacts. Providing open, non-judgemental communication that addresses these concerns and acknowledges their underlying motivations is therefore essential for fostering trust and sustaining vaccine confidence.

Quantum machine learning: A transformative approach for big data and complex systems

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Machine Learning (ML) is a branch of Artificial Intelligence (AI) that enables classical computers to identify patterns and predict outcomes by learning from data, with applications ranging from fraud detection to medical diagnostics. As datasets grow larger and patterns become more complex, classical ML models increasingly face challenges, around speed and scalability.

In contrast, Quantum Computing (QC), based on principles of quantum mechanics such as superposition and entanglement, processes high-dimensional and complex datasets in ways that classical computers cannot. The integration of QC with ML, referred to as Quantum Machine Learning (QML), has given rise to one of today's most transformative emerging disciplines.

The authors of this paper will undertake a study on this topic and are currently working to formulate the research gap and methodology.

Quantum-classical integration

QML seeks to unlock new methods of processing information by combining the complementary strengths of quantum and classical computing. By accelerating computation and enabling the handling of complex patterns, QLM offers promising opportunities for advancing big data analytics and for overcoming the scalability bottlenecks of classical systems. Conventional approaches and hardware currently require days or weeks to process large datasets and are reaching their practical limits, positioning QML as a potentially transformative development in computing.

As quantum processors become increasingly accessible through major technology companies such as IBM, Google and Xanadu, researchers, scientists and educators are beginning to experiment with QML in practical settings, gaining experience in addressing the limitations of classical ML. This growing engagement presents exciting opportunities for teaching, research and career development in one of the most forward-looking areas of computing.

From classical data to quantum states

A central challenge in QML is translating classical data such as text, images, text, and tabular records, into quantum states both efficiently and significantly for quantum processing. Building on recent research around quantum algorithms, these authors' forthcoming study will explore various encoding strategies, of which amplitude encoding and angle encoding are the mostly widely used. Amplitude encoding allows for compact representation of data but requires complex quantum operations, while angle encoding is easier to implement but less efficient in terms of data density.

The appropriate encoding method depends on the available quantum resources, the type of data, and the targeted quantum algorithm. Importantly, the choice between amplitude and angle encoding directly affects how well a quantum model can be trained and deployed. These considerations have been central to the development of these authors' study, which has focused on evaluating encoding schemes for supervised learning tasks such as classification and regression.

Hybrid systems in practice

A significant proportion of QML research and development is built on hybrid quantum-classical architectures. Central to this is the use of variational

quantum circuits (VQCs), which blend quantum feature transformation with classical optimisation. These hybrid systems aim to leverage the strengths of both computational paradigms - quantum processing for feature transformation and classical processing for optimisation and interpretability.

This approach is particularly effective given the constraints of modern Noisy Intermediate-Scale Quantum (NISQ) devices, which are not fault tolerant and have a low coherence time. By offloading part of the computational burden to classical processors, hybrid systems can deliver functional QML models within these constraints.

Forthcoming study

These authors' proposed study will make use of open-source tools including Qiskit (IBM), PennyLane (Xanadu), and TensorFlow (Google), all of which provide the software infrastructure needed to design, simulate, and deploy QML models. These platforms offer tools for quantum circuit creation, data embedding, integration with classical ML libraries, and direct execution on available quantum hardware.

Qiskit, for instance, allows developers to construct variational classifiers, train them on classical data, and execute them either on simulators or on IBM's cloud-based quantum devices. The accessibility of such platforms has played a key role in expanding educational and research opportunities across the field.

The authors will implement and benchmark quantum classifiers using these open-source frameworks, with a specific focus on how well they perform relative to classical counterparts on small, well-defined datasets. The study will examine the effectiveness of different encoding techniques for two-dimensional and multi-class datasets, and will construct hybrid quantum-classical classifiers using VQCs.

These models will be evaluated on the basis of accuracy, circuit depth, number of qubits - the basic units of information used to encode data in quantum computing - and training time. Particular attention will be paid to the trade-offs between model performance and quantum resource usage, which is critical when scaling towards large datasets in complex real-world applications.

By systematically assessing these factors, the study aims to provide insight into how hybrid QML could address the bottlenecks faced by classical ML approaches, as illustrated in Figure 1.

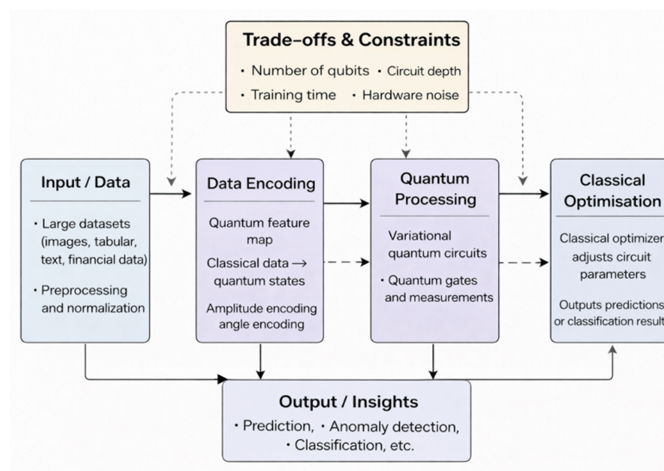

Figure 1: Hybrid Quantum-Classical Pipeline

In the proposed hybrid quantum-classical pipeline, there are four stages and considerations around outputs and trade-offs. During Stage 1 (Input/Data), massive amounts of data are gathered, processed and standardised. Stage 2 (Data Encoding) encodes classical information into quantum states by encoding the data by amplitude or angle. Stage 3 (Quantum Processing) is where parameterised quantum circuits are used to process the data using quantum gates and measurements. Stage 4 (Classical Optimisation/Post-Processing) operates classical optimisers to optimise circuit parameters, or to produce predictions or classifications.

Output/Insights indicate the final predictive outcomes generated after classical optimisation, whereas the Trade-offs and Constraints capture system-level considerations, such as qubit availability, circuit depth, and training time; these are considerations that influence the data encoding, quantum processing, and optimisation stages of the hybrid workflow. Solid lines in Figure 1 indicate data flow, while dotted lines represent interactions and system-level constraints influencing the workflow.

Key insights and future directions

This study will examine key open-sources platforms - Qiskit, PennyLane, and TensorFlow Quantum - and their capabilities for supporting hybrid quantum systems in the context of large, complex datasets. It aims to demonstrate how hybrid QML can overcome the limitations of traditional ML within currently available hardware constraints, accelerating data processing and serving as a transformative tool for an emerging area of computing.

Looking ahead, additional work will explore scaling hybrid models to larger datasets and developing interactive teaching resources. QML will also be applied to high-dimensional problems such as fraud detection and financial modelling, where traditional approaches may take days or weeks, or struggle to find solutions at all.

QML remains an evolving field, but one that holds considerable potential for students, researchers, and educators. Future studies will provide deeper insights and help equip those communities to engage with QML, shaping the future of education, science, industry, and society.

Beyond the shopping list: Applying diary methods to explore sustainable food practices

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As sociologist Anthony Giddens observes, 'Most of what people do in their day-to-day lives is done as a matter of routine, without being directly motivated by conscious intentions'. Diary methods are a valuable qualitative research tool for exploring these routine, everyday practices, and can record real-time or near-real-time reflections, which allow researchers to understand temporal changes, micro-decisions, and situational experiences. This approach is particularly useful in sustainability and consumption research, where behaviours develop over time rather than at a single point in time.

This paper outlines the methodological value of diary studies, drawing on well-established literature and early insights from my own ongoing research. It explains why diaries are especially suitable for examining sustainable food practices, how the design of diaries affects data quality, and what researchers should consider when working with data generated by participants over time.

The value of diaries in qualitative research

Diary studies position participants as active observers of their own practices. Research suggests that diaries reduce recall bias and offer more accurate accounts of everyday routines than retrospective methods. More recent methodological reviews emphasise the diary's ability to capture the mundane, fragmented, and iterative nature of daily life, which is often lost in narrative interviews. Another study highlights the flexibility of diary methods to be adapted to different research aims through structured, semi-structured, or open designs.

Diary methods are especially valuable when practices are context-dependent, shaped by daily variations, influenced by household or cultural factors, and hard to discuss in socially neutral terms. Sustainable food practices meet all four criteria, making diary methods an effective choice for research in this field.

Temporal insights and micro-decision making

One of the key features of diary approaches is their ability to incorporate time directly into the research design. While interviews can offer a consolidated account of past experiences, diaries capture temporal variation in choices, non-linear decision-making, the influence of competing demands, and fluctuations in household routines. Such temporal granularity enables researchers to grasp when and why sustainable or unsustainable practices occur. For instance, participants might plan carefully at the beginning of the week but still discard food later due to unforeseen schedules or fatigue. Diaries expose these nuances, illustrating sustainability as an ongoing negotiation rather than a fixed behaviour.

A diary approach also allows researchers to explore food-related practices before and after shopping, rather than focusing only on purchasing decisions. Diary studies are particularly well-suited to capturing planning routines, negotiations with family members, storage and preparation habits, and moments when intentions change across the week, processes that are often overlooked in retrospective interviews. These reflections, before and after shopping, reveal how the flow of daily life shapes sustainability. By capturing what happens beyond the shopping list, such as adjustments, improvisations, or instances of waste, diaries offer a more comprehensive understanding of food practices within context.

Designing effective diary studies

Methodological literature highlights several factors that affect the quality and depth of diary data, including clarity of prompts, participant burden, flexibility of format, and researcher-participant communication. Drawing on these insights, three key considerations guide the design of effective diary studies: structured yet flexible prompts; maintaining a clear, neutral tone; and providing guidance and support for participants.

Structured yet flexible prompts: Semi-structured diaries, in which participants receive focused questions while maintaining interpretative freedom, are widely recommended. Overly rigid templates can limit reflection, while completely unstructured diaries risk inconsistent depth. My study employs a two-phase structure (pre-shopping and post-shopping reflection), aligning with best practice for behaviour-focused diaries.

Maintaining a clear, neutral tone: Participants might see sustainability prompts as evaluative. Research on qualitative reflexivity indicates tone affects participants' willingness to share socially undesirable behaviour. Therefore, diary questions are phrased in neutral or positive terms (e.g., 'What supported your food decisions this week?') and participants are explicitly assured that all experiences, including less sustainable moments, are valuable.

Participant support and guidance: Orientation scripts, examples, and brief check-ins help reduce anxiety about 'doing it correctly' and enhance data completeness. Early pilot entries in my study showed only yes/no responses when prompts were too broad, emphasising the importance of providing clear, example-based guidance.

Diaries for sustainability research

Understanding sustainable consumption requires observing what people do, rather than just what they intend or believe. Diaries are particularly valuable because they reveal how sustainability is practised in everyday routines. They capture moments when convenience or fatigue supersede intention; decisions influenced by family, cultural, or religious norms; micro-adaptations such as freezing food, repurposing leftovers, or delaying shopping. These insights demonstrate sustainability as a lived, negotiated practice rather than a fixed attitude, providing rich data for researchers interested in everyday practices, environmental impact, and habit formation.

I conducted a small pilot study exploring diary-based reflections among participants from UK households. This pilot formed part of a wider qualitative research project aimed at understanding how daily routines, intentions, and household dynamics influence food consumption and food waste. Insights from the diaries revealed that one participant carefully planned meals at the weekend with the intention of minimising food waste. However, subsequent diary entries later showed that mid-week fatigue and unexpected work pressures led to takeaway meals, leaving some planned ingredients unused. The participant then adapted by freezing certain items, repurposing vegetables into a quick soup, and discarding a small portion that could not be saved.

Such temporal shifts and adaptive responses are challenging to capture through retrospective interviews alone but emerge clearly in diary-based research. Diary methods are a valuable qualitative research tool for exploring everyday practices, but additional follow-up interviews or focus groups can also complement diary entries by probing meaning, motivations, and tensions in participants' accounts. This combination enhances analytical depth, enabling researchers to examine contextual factors behind observed practices while reinforcing interpretive validity and offering a more comprehensive understanding of everyday sustainability.

Concluding thoughts

Diaries, as a window into practice, offer a powerful way to capture the rhythms, constraints, and negotiations of daily life. For sustainability researchers, this approach offers insight into how individuals manage micro-decisions, cultural norms, and temporal pressures in their everyday practices. When carefully designed, diaries can reveal subtle, context-specific behaviours, emphasising the importance of temporality, reflexivity, and participant-centred approaches in qualitative research.

In short, diaries enable researchers to move beyond what people say they do to what they actually do, offering invaluable insights into understanding and encouraging sustainable practices in daily life. As sustainability challenges continue to develop, methods that help us understand everyday choices are not just useful; they are crucial.

Research paradigms in social science research

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The complexity of social science research stems from the study of human behaviour, social interactions, and organisational phenomena. A typical challenge faced by social science researchers, particularly novice researchers and graduate students, is building the congruence between research questions, methodologies, and the associated philosophical constructs. This challenge can often come from a lack of engagement with research paradigms. A paradigm is the worldview that shapes the beliefs and values guiding how a particular field approaches problem solving. Additionally, every researcher holds beliefs about truth and knowledge that inform their thinking and the assumptions they make about the world, society, and themselves.

When undertaking research in the social sciences it is essential to study the relevant research paradigms to avoid methodological inconsistencies which lead to analytical weakness and poor research outcomes. This paper will support such understanding through a clear review of the concepts of ontology and epistemology before examining the dominant paradigms of positivism and interpretivism.

Ontology: Understanding the nature of reality

Ontology is the study of 'being' and is concerned with the nature of existence and structure of reality, traditionally considered a major branch of philosophy. In social science research, ontological positions range from the extreme objectivist, where reality is perceived to exist independently of human understanding, to the extreme subjectivist, where reality is perceived to be constructed socially, through interactions and individual thinking.

Researchers who employ an objectivist position typically consider the main purpose of research to be the establishment of cause-and-effect relationships between variables in order to explain and predict social phenomena. This perspective presumes that the social world is consistent, observable, and quantifiable, and is best suited to research grounded in empirical evidence and statistical techniques.

In contrast, a subjectivist stance posits that social reality is fluid and is constructed and reconstructed through processes of human interaction and the attribution of meaning. Unlike the objectivist view of a single, unified reality, subjectivism recognises that the same phenomena can be experienced and interpreted in a multitude of ways by different individuals and social groupings, and that there can be a plurality of realities. These differing ontological assumptions about the nature of reality naturally give rise to further questions, namely, how reality is measures and what constitutes knowledge within it. This leads to the related concept of epistemology.

Epistemology: Ways of knowing

Epistemology is a branch of philosophy concerned with the nature, scope, and sources of knowledge, often referred to as the 'theory of knowledge'. In social science research, epistemological assumptions shape how researchers understand the generation, confirmation and dissemination of knowledge, and, like ontology, these assumptions can be broadly understood as either objective or subjective.

The objectivist view of epistemology holds that the world exists independently of the researcher and that knowledge can be discovered through empirical testing, observation and measurement. From this standpoint, knowledge is considered valid when systematic methods are applied that minimise subjectivity and bias, making quantitative data and statistical analysis particularly well suited to this position.

In contrast, the subjectivist epistemological view holds

knowledge is always understood through the researcher's interpretation, social context, and lived experience. From this perspective, studying social phenomena is not about finding universal explanations, but rather engaging with the meanings, interpretations, and viewpoints of social actors. Together, ontology and epistemology form the philosophical foundation upon which research paradigms are built.

Research paradigms in social science

Research paradigms represent overarching belief systems that guide how research is conceptualised and conducted. They encompass ontological and epistemological assumptions, methodological preferences, and criteria for evaluating knowledge claims. While numerous paradigms exist, this paper focuses on positivism and interpretivism due to their foundational role and continued prominence in social science research, particularly business and management. Other paradigms can be understood as extensions, critiques, or combinations of these two dominant traditions.

Positivism

Positivism is grounded in the values of reason, truth, and validity, and holds that reality is objective and external. Knowledge generates through empirical observation and testing. Research hypotheses are derived from existing theory and tested deductively, making positivism closely associated with quantitative approaches. Positivist researchers treat phenomena in the same way natural scientists treat physical phenomena, prioritising measurement, causation, and prediction. Personal thoughts and ideas are considered sources of bias rather than knowledge, and cause-and-effect relationships are regarded as the governing principle of empirical inquiry. In practice, positivist research typically employs social surveys and experimentation, supported by statistical analysis to identify trends, associations, and generalisable theories.

While positivism has contributed significantly to the development of systematic and replicable research, it is not without limitations. Critics argue that positivist approaches may oversimplify complex social realities, neglect context, and overlook the subjective meanings that individuals attach to their experiences. Such limitations are particularly significant in research where process, meaning, and interpretation are central.

Interpretivism

Interpretivism assumes that social reality is subjective, multiple and socially constructed, with knowledge co-created through interaction between the researcher and participants. Rather than seeking universal laws, interpretivist researchers aim to understand how individuals and groups make sense of their social world, and the specific ways in which meaning is shaped by context. This paradigm is associated with qualitative approaches and takes the view that there are fundamental differences between natural and social sciences, a position sometimes referred to as post-positivism.

Because individuals and groups interpret situations through the lens of their own experiences, observations, and expectations, meaning is constantly and reconstructed, giving rise to multiple realities. Interpretivism is therefore inductive and theory-building in nature, employing methods such as interviews, observation, and textual analysis to understand social actors on their own terms. Findings are highly contextualised and, in part, reflect the researcher's own perspective and experience.

Like positivism, interpretivism has limitations. Findings can be difficult to generalise beyond their specific context, and the influence of personal viewpoints can sometimes undermine reliability and representation to a degree. Critics also point to the risk of potential researcher bias and the subjective nature of this approach. Nonetheless, these are often regarded not as weaknesses but as inherent features of research that seeks to capture meaning and complexity.

Concluding thoughts

This paper has put forth the idea that research paradigms are fundamentally important to the development of social science research. The review of ontology, epistemology, positivism, and interpretivism demonstrates how philosophical assumptions shape methodological choices and the construction of knowledge.

Rather than considering paradigms as abstract or purely theoretical, researchers are encouraged to recognise their practical significance at every stage of the research process. Positivism offers a structured and generalisable approach to understanding social phenomena through objective, measurable, and testable inquiry. Interpretivism focuses on the subjective dimensions of human behaviour, prioritising meaning, context, and the recognition of multiple realities. Each paradigm offers different insights and neither is universally applicable; the choice depends on the nature of the research question and the methodological framework it demands.

Ultimately, selecting the right paradigm is not merely a philosophical exercise but a practical one that affects every area of a study. A clear understanding of paradigms and assumptions equips researchers to justify their chosen methodology, strengthen confidence in findings, and ensure coherence throughout the research. Engagement with research paradigms is therefore essential, not only for individual researchers but for the broader development of theory and practice in the social sciences.

TRUST in computing and engineering to build a secure, ethical and resilient future

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Computing professionals and engineers increasingly work together to align research and teaching for the greater benefit of society, designing secure, ethical, and resilient products across software development and applied engineering domains such as electronics, robotics or infrastructure. A critical challenge facing both fields is trust: can we rely on the systems we design? Are they secure, ethical, resilient in practice, and compliant with regulations?

This paper introduces the TRUST framework: Transparency, Resilience, User-Centricity, Security, and Trustworthiness/Technology Ethics. This new conceptual framework has been developed by the author to address issues of trust across computing and engineering disciplines. It aims to highlight opportunities for interdisciplinary collaboration in order to enhance the quality of teaching, learning, and assessment in higher education (HE) while benefiting wider society.

Indeed, evidence supports this interdisciplinary approach. In engineering, multidisciplinary design optimisation (MDO) demonstrate how integrating knowledge across disciplines can achieve superior design outcomes. Bibliometric analysis further shows that combining multiple disciplines contributes significantly to technology development, while recent research confirms that interdisciplinary collaboration improves curriculum quality, consistency, and stakeholder satisfaction for both educators and industry partners. It is within this context that the TRUST framework was developed.

The TRUST framework

The TRUST framework provides a structured roadmap for bringing computing and engineering research and teaching in the context of UK higher education closer together, offering improved curriculum coherence, stronger alignment with industry needs, and more authentic assessment practices.

T - Transparency: In computing, transparency refers to explainable algorithms, open data practices and clear system design; in engineering, it refers to documented processes and traceable design choices. A shared emphasis on transparency enables mutual understanding of methods and assumptions across disciplines, contributing to more visible and coherent operational designs.

R - Resilience: Computing resilience focuses on fault-tolerant, robust software systems that maintain safe operation under failure conditions, while engineering resilience emphasises structural integrity, system redundancy, and environmental robustness. Together, these perspectives support sustainable interdisciplinary systems across digital and physical domains.

U - User-centricity: In computing, user-centricity encompasses intuitive interfaces, accessibility, and privacy; in engineering, it encompasses ergonomic design, safety, and usability. Aligning these perspectives ensures interdisciplinary solutions remain inclusive, safe, and accessible.

S - Security: Computing security encompasses encryption, authentication, and intrusion detection, while engineering contributes safety-critical control systems and environmental protections. Collaboration ensures security is embedded across both software and physical systems, preventing harm and breaches.

T - Trustworthiness/Technology ethics: This element binds the preceding four, embedding ethics, accountability, and compliance into both computing

and engineering practice to ensure responsible design, deployment, and use of technology.

Taken together, the TRUST framework seeks to introduce the idea of an integrated approach to learning, teaching, assessment, and research in HE computing and engineering that enhances learning outcomes, research impact, and student engagement through the promotion of interdisciplinary collaboration and joined-up curriculum development. The following section considers how the framework can support interdisciplinary teaching and research in practice.

TRUST-aligned research opportunities

The TRUST framework aims to guide interdisciplinary research by providing a shared structure for aligning technical, ethical, and operational decisions across computing and engineering. An example of what this could look like involves smart traffic management. Modern cities increasingly rely on software systems to control traffic flow, reduce congestion, and optimise public transport. These systems must operate reliably under high demand, respond to real-time disruptions, and balance efficiency with public safety and ethical data use.

Software engineering research develops intelligent traffic algorithms using real-time sensor data to dynamically control signals. Collaboration between computing and engineering researchers strengthens such systems, ensuring they are reliable, ethical, user-focused and socially responsible. In practice, TRUST supports through explainable design, resilient systems, user safety and accessibility, data protection, and ethical governance.

This collaboration divides naturally across the disciplines. Computing research focuses on developing secure, fault-tolerant and explainable algorithms for real-time decision making, ensuring reliability, transparency and data privacy. Engineering research focuses on designing resilient physical infrastructure, including sensors, communication networks and control systems, that integrate seamlessly with software, enhancing robustness and user safety. This model extends beyond traffic management.

Computing and engineering researchers can collaborate across a wide range of domains, including cybersecurity platforms, smart energy grids, digital twin models of power plants, fraud detection systems and intelligent transportation solutions. In each case, computing contributes secure, intelligent, and data-driven algorithms, while engineering contributes resilient, safe and user-centred infrastructure. Together, they embody the principles of TRUST and open opportunities for researchers and wider society.

Embedding TRUST in teaching

Within the TRUST framework, each element holds pedagogical significance. Transparency enables clear communication of the ‘what’, ‘how’, and ‘why’ of course design, learning activities and assessment, empowering students to understand expectations and learning outcomes more effectively. Resilience is reflected in inclusive assessment design and flexible learning pathways while User-centricity can be seen in accessible, student-focused pedagogy. Security is highlighted in ethical data handling and academic integrity, and Trustworthiness in fair assessment, accountability and regulatory compliance.

Transparency manifests differently across disciplines but serves a common purpose. In computing, it refers to open access to algorithms, well-documented code, and visible data workflows. When teaching machine learning, for example, lecturers can walk students through how an algorithm works step by step, integrating principles of fairness, explainability and accountability. This helps students to understand not only what a system does, but why it behaves as it does, reducing student anxiety and supporting deeper learning.

In engineering, transparency refers to documented design rationales, traceable outputs, and explicit safety considerations. When teaching structural design, lecturers can foreground material choices, safety factors, ergonomic principles, and environmental issues as core elements of professional practice, fostering ethical awareness and regulatory understanding.

When computing and engineering students collaborate, shared transparency becomes especially powerful. Seeing how explainable traffic algorithms align with transparent engineering blueprints, for example, reduces confusion, builds confidence, and motivates deeper engagement with collaborative tasks. Recent research supports this, showing that transparent teaching practices improve student confidence, persistence, and sense of belonging. Embedding transparency consistently across both disciplines would not only enhance teaching quality, but encourage stronger participation by connecting classroom activity to professional practice and real-world impact.

A call to action

This paper has introduced the TRUST framework as an interdisciplinary approach to strengthening collaboration between computing and engineering across research and teaching. While implementation will require effort, particularly around curriculum alignment and interdisciplinary coordination, colleagues are encouraged to begin by embedding the principles of TRUST into joint projects, module design, and assessment practices. Future work will refine the framework through practical application and evaluation, supporting its wider adoption towards a broader contribution to student success and societal impact.

Call for Submissions

We maintain an ongoing call for submissions to the Research and Scholarship Digest. We welcome ideas and research from staff at Regent College London and are happy to support you to develop an idea into a paper. We also invite members of staff to recommend student contributions to the RSD which are especially well done, original, or innovative.

For any questions or to contact any of the authors in this Issue, please get in touch at **scholarship@rcl.ac.uk**.

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