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This is a vibrant, abstract graphic design set against a dark charcoal background. The composition is a dense collage of organic and geometric shapes. In the upper left, a yellow circle is filled with black dots, partially encircled by a thick, grey brushstroke. To its right, a large, light blue circle is defined by concentric grey lines. Below the dotted circle, an orange shape is partially visible. In the center, a blue circle contains several black wavy lines. To the right of this, a grey shape is dotted with small orange circles. The design is further embellished with various brushstrokes: a thick green line curves around the top left, a yellow line loops around the center, and a light blue line swirls on the right. At the bottom, there are horizontal brushstrokes in orange, light blue, and grey, with a small yellow semi-circle at the very bottom center. The overall effect is one of dynamic energy and artistic expression.

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Assessing Generative-AI's impact on Student Research, Writing and Assessment Production activities in Higher Education: An Activity Theory Perspective

Ian Hall
19th June 2025

Introduction

- What's the problem ?
 - GenAI as a disruptor ([Marr, 2023](#))
 - Fastest adoption rate of any new technology in HE ([Bick, 2024](#))
 - Challenge embrace technology whilst maintaining integrity In Teaching & Learning ([Cotton, 2023](#); [Burnett, 2023](#))
 - What does it mean to be original ? ([Luo, 2024](#))
 - How can we evidence learning if GenAI can write a student's work?
 - Change in the student role ([Hyde et al, 2024](#))

Outline of the study

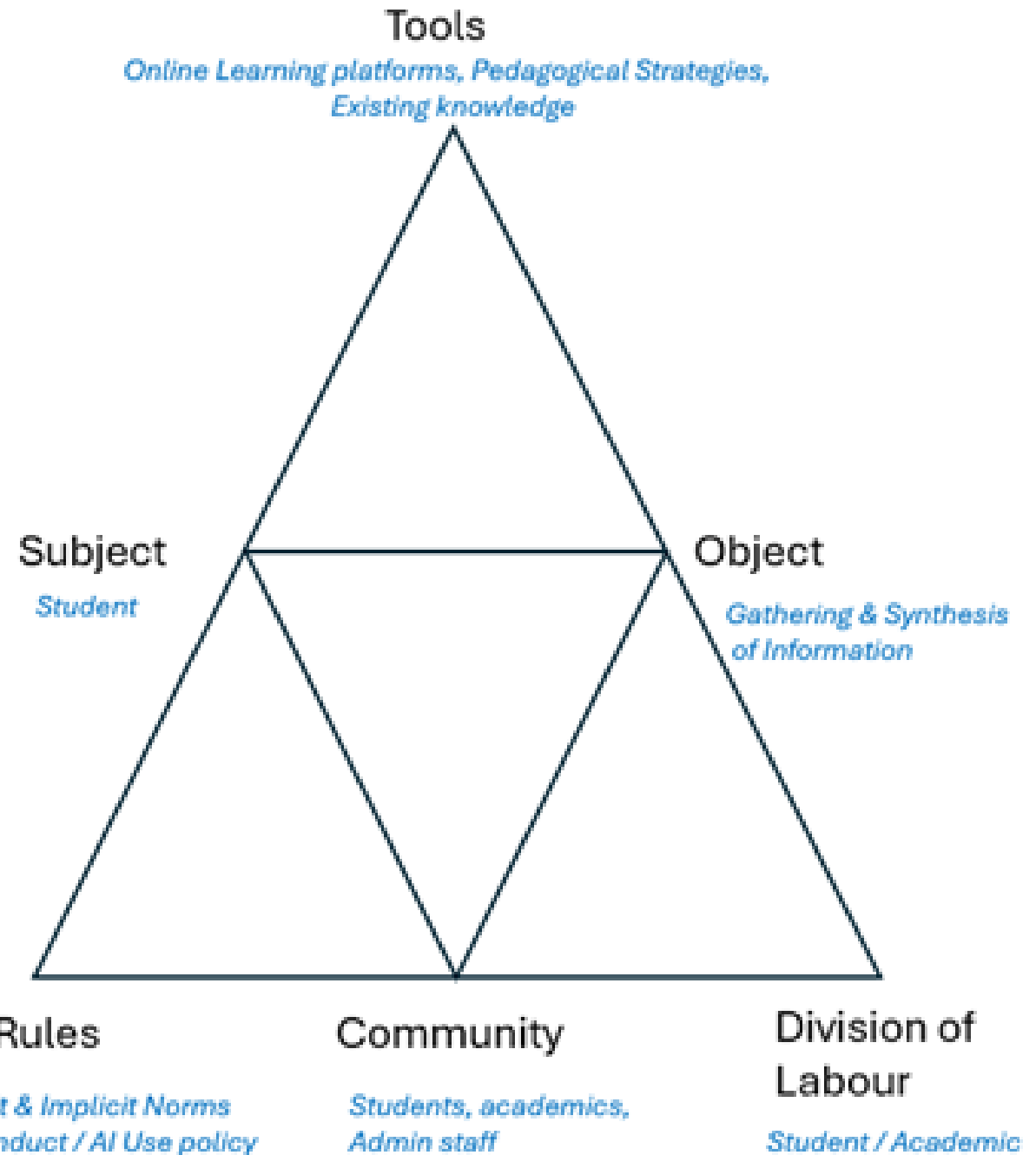
Desk based analysis
of literature

Use of Activity Theory
as a framework for
the study

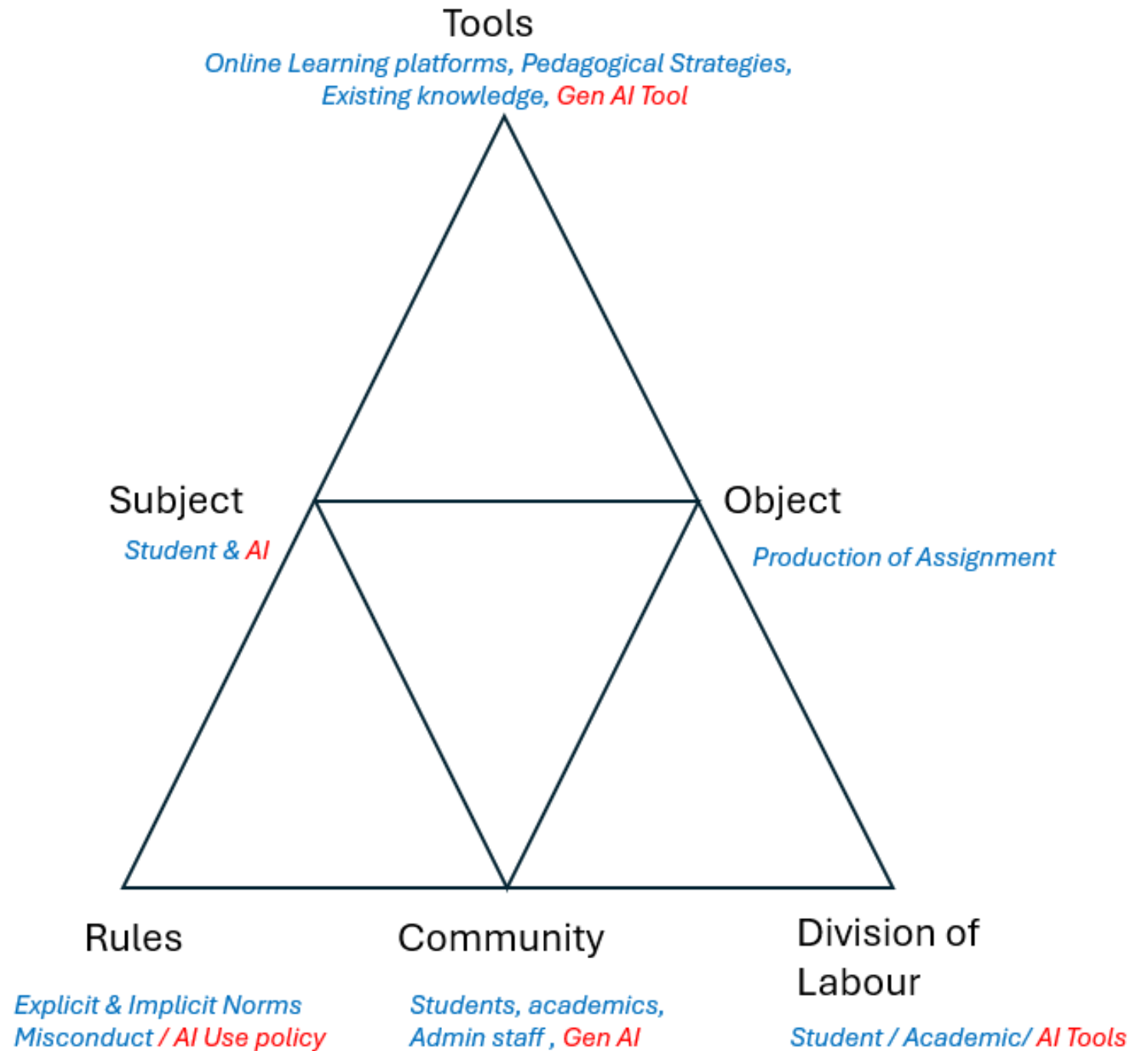
Use of Thematic
Analysis to develop
five themes

Activity Theory

(Engestrom,2000)



Activity Theory



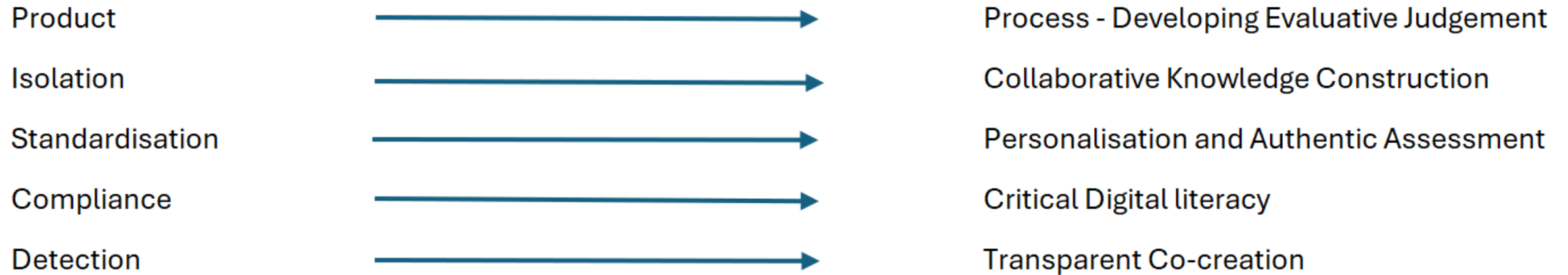
The use of Contradictions in Activity Theory

- A tension of mismatch between parts of the Activity System
([Engestrom, 2000](#))
 - **Primary Contradiction** - within a single component
 - **Secondary Contradiction** - between components
 - **Tertiary Contradiction** - introduces a new activity step
 - **Quaternary Contradiction** - between systems

Contradictions Identified

Contradiction	Level	Transformative Pathway
Dual Nature of Gen-AI as a Tool	Primary	From Product to Process: Developing Evaluative Judgment
Balancing Resistance to Change with Innovation	Tertiary	From Product to Process: Developing Evaluative Judgment
Disparities Between Student Capabilities and AI Affordances	Secondary	From Isolation to Collaborative Knowledge Construction
Conflicting Conceptions of Assessment Purpose	Primary	From Standardisation to Authentic Assessment
Academic vs Professional Expectations	Quaternary	From Standardisation to Authentic Assessment
Misalignment Between AI Outputs and Assessment Goals	Secondary	From Compliance to Critical Digital Literacy
Ethical vs Economic Pressures	Quaternary	From Compliance to Critical Digital Literacy
Traditional Integrity Policies vs. AI-Generated Content	Primary	From Detection to Transparent Co-creation
Institutional Policies vs. Community Practices	Secondary	From Detection to Transparent Co-creation
Redefining Originality and Authorship	Tertiary	From Detection to Transparent Co-creation

Themes from the Analysis



From Product to Process

- Assessment through the use of written assignments may not detect learning simply an ability to generate a product by the student. ([Boud, 2000](#); [Joughin, 2010](#))
- Need for a process orientated approach
- Emphasis on Evaluative Judgement for student learning ([Dawson et al, 2024](#); [Bearman et al, 2024](#))
- Need to capture higher order thinking skills
- Use of Low stakes formative checkpoints to ensure learning is taking place ([Vyas et al, 2023](#))

From Isolation to Collaborative Knowledge construction

- A move from a hierarchical model of education to collaborative knowledge construction ([Fairclough & Fairclough 2012,8](#))
- Recognition that learning is an active and collaborative process
- Need to learn both subject skills and soft skills within the course
- Creation of collaborative Learning Environments that are used by Tutor & students

From compliance to the development of Critical Digital Literacy

- A move away from rules-based education
- Change in student agency ([Corbin et al, 2025](#))
- Interpretation of AI Policies create cognitive & emotional burden on students ([Chan, 2023](#))
- Emergence of new behavioural norms requires a move away from a focus on compliance to Critical Digital Literacy ([Santoveña-Casal & Lopez, 2024](#))

From Standardisation to Personalisation & Authentic Assessment

- Value of Authentic Assessment within the Institution ([McArthur, 2022](#))
- Value of personalisation of learning to deliver desired outcomes
- Use of GenAI tools to support not replace learning
- Educate students in how the constraints of tools / techniques
- Creation of a hybrid curriculum allow students to have agency for their learning

From detection to Transparent co-creation

- Shift of focus from the identification of GenAI use to establishment of overarching principles
- Recognition of Technological realities of an AI World
- GenAI detection tools are becoming less effective as GenAI capabilities develop
- A move from detection of GenAI use to use an assessment approach the values Human-GenAI collaboration
- Assessment & Policy frameworks that acknowledge the reality of hybrid writing practices

Conclusions

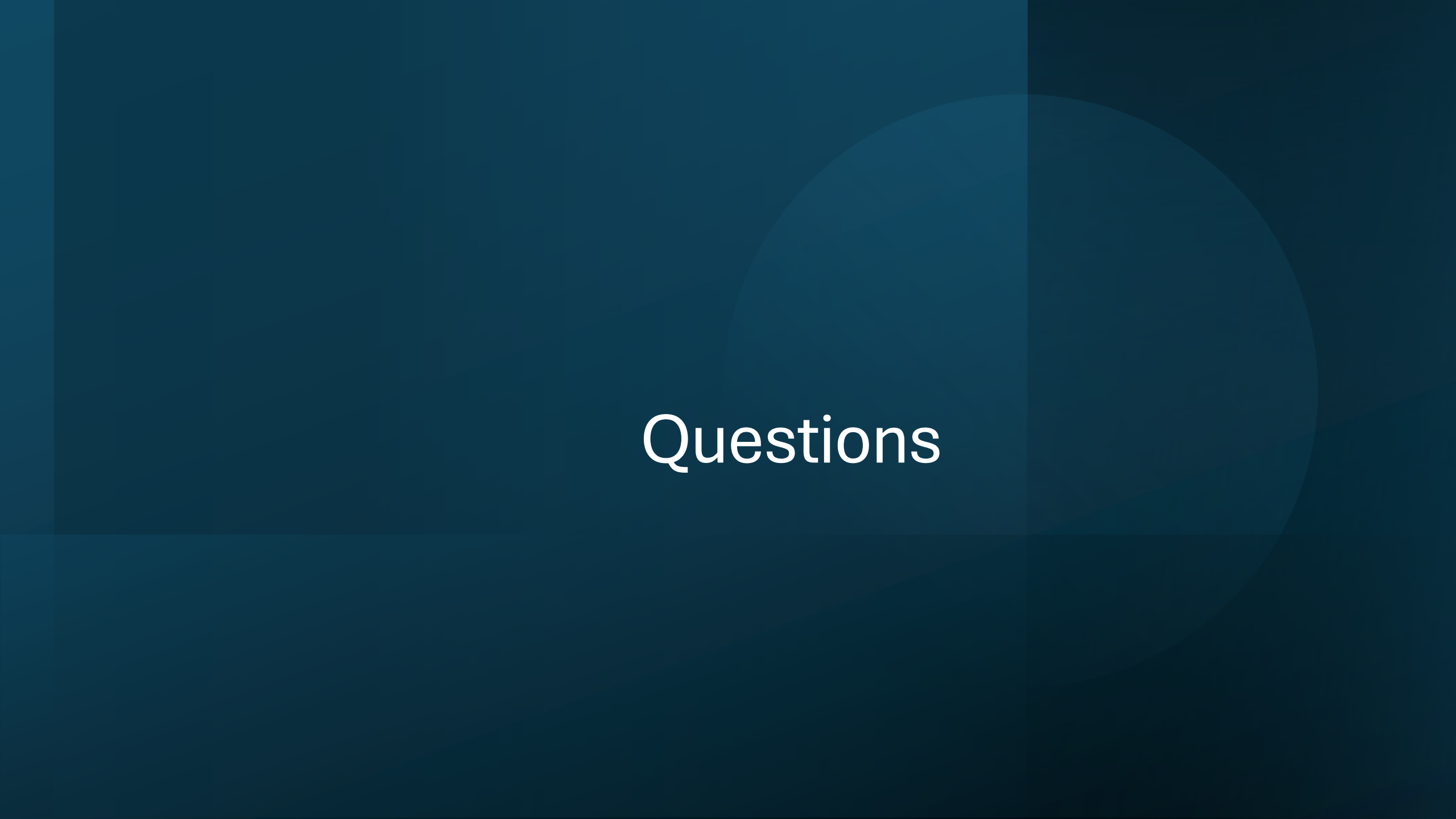
- Need to move from the student as a 'lone genius in the attic'
- Need to acknowledge the emergence of hybrid writing practices
- Need for policy to reflect and acknowledge practice
- Ongoing tension between HEI & Student can be used to drive change

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Questions



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CEDAR CONFERENCE 2025

Dr Rebecca Upsher & Jieying Yu

Embedding GenAI into Teaching

Supporting metacognitive
learning in essay writing in
undergraduate psychology
students

Do you use GenAI in your teaching?



Collaborative AI in Education Projects (2023–2025)

- 1 Focus Groups of student and staff views on ChatGPT in Assessment (2-year follow-up in progress)
- 2 Twitter (X) Analysis of Staff Views of GenAI in Higher Education (**Published!**)
- 3 RCT on Detection of GenAI-assisted vs. Student-written Essays (manuscript in preparation)
- 4 Book Chapter on GenAI and Authentic Assessment (**Published!**)
- 5 Understanding the needs of students in using GenAI in Higher Education (under peer review)
- 6 Use of GenAI in the workplace for Psychology Graduates (manuscript in preparation)
- 7 Examining GenAI use in undergraduate versus postgraduate students, and home versus international students (project ongoing)
- 8 Pilot RCT of using GenAI in teaching to support metacognitive learning in essay writing in undergraduate psychology students (manuscript in preparation)

Student collaborators: Molly Whitbread^{1,2,4}; Chloe Hayes², Ioana Rusnac⁵, Katherine Haselton⁵, Hana Ahmed⁶, Yuxiang Bian⁶, Hemei Zhang⁶, Zhifei Luo⁷, Marija Nikolic⁷, Saiba Hussain⁷, Jieying Yu⁸

Staff collaborators: James Findon^{1,3,4,5}; Claire Heard^{1,3,4,5,6,7}; Sumeyra Yalcintas^{1,3,4,5,8}; Oliver Runswick³; Jayne Pearson^{4,5}

Collaborative AI in Education Projects (2023–2025)

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- 2 Twitter (X) Analysis of Staff Views of GenAI in Higher Education (Published!)
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Background

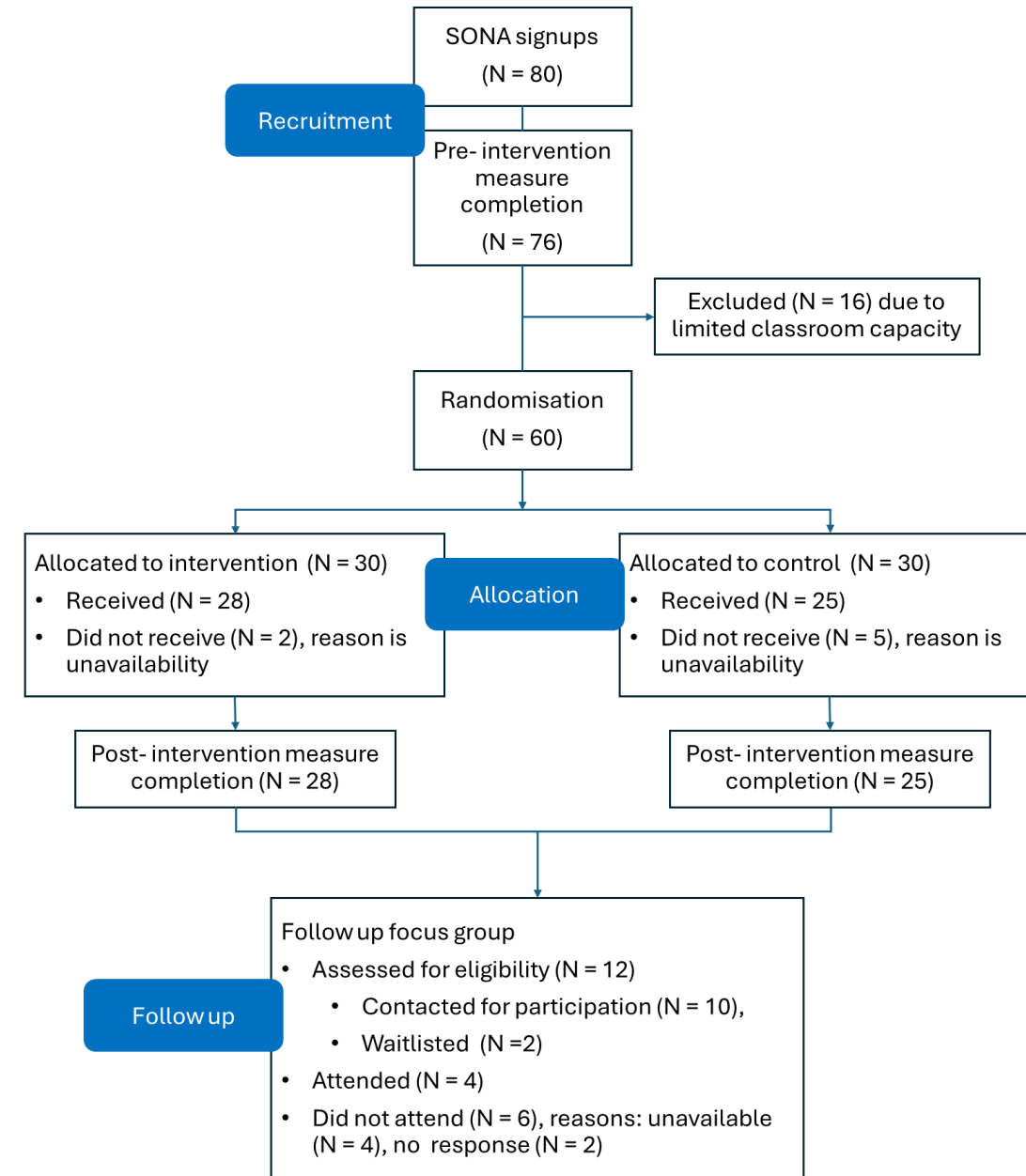
- Teaching practices influence student wellbeing and learning.
- Universal teaching strategies that help reduce anxiety are increasingly important.
- Assessment, for example, essay writing, is a potential source of student anxiety.
- Enhancing students' meta-cognitive awareness can reduce anxiety.
- There is a theory-teaching gap regarding meta-cognition for university students.
- The impact of teaching students how to use Generative AI (GenAI) to support their learning is not yet well understood.
- This study compares traditional workshops (no GenAI use) with workshops that included instruction on using GenAI to enhance meta-cognitive strategies for essay writing.

Methods

Study Design	Single Blind Pilot Randomised Controlled Trial; pre-post surveys; focus groups
Participants	1st year Psychology students, KCL
Intervention Provider	Lecturer in Psychology (Education); core module Y1 lead
Intervention Developer	Lecturers in Psychology (Education); BSc Psychology final year students
Setting/Location	King's College London; Seminar room
Timing/Duration	1 X 2-hour session (12-2pm, Wednesday); January 2025
Delivery	Face to face; group activities; extracurricular
Materials	QR codes to activities; PowerPoint slides; laptops for activities; pen and paper options
Evaluation	Attendance; Observers (BSc Psychology student; PhD student)
Outcomes	Meta-cognitive awareness; Essay Anxiety

*Checklists for reporting: Upsher, R., Dommett, E., Carlisle, S., Conner, S., Codina, G., Nobili, A., & Byrom, N. C. (2025). Improving reporting standards in quantitative educational intervention research: introducing the CLOSER and CIDER checklists. *Journal of New Approaches in Educational Research*, 14(1), 2.

CONSORT flowchart



Introduction to Metacognition

Four domains of meta-cognition we will focus on today:

1. Reflection
2. Planning
3. Learning Strategies
4. Monitoring

Intervention Only Group: Defining Generative AI

GenAI is a learning tool, not a shortcut; it should be used to supplement, not replace, a student's own work and critical thinking skills.

Structure of Intervention vs Control

Intervention	Control
Listing stages of essay writing	Same
Definition of the domain of meta-cognition (reflection, planning, learning strategies, monitoring)	Same
Get students in groups to link items in their 'stages of essay writing' list to the domain of metacognition	Same
Demonstration of using a Prompt in CoPilot (aligning with meta-cognitive domain)	N/A
Student activity related to the meta-cognitive domain (using GenAI) + discuss the output	Similar activity without GenAI
Additional tips for supporting that meta-cognitive domain (plus GenAI prompts to try)	Same (without GenAI prompts)

What do the workshops actually look like?!

Let's have a go....!

Structure of Intervention vs Control

Intervention	Control
Listing stages of essay writing	Same
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Understanding Essay Writing Process

Discuss with the people next to you & post here:

All the stages of writing an essay for coursework (as detailed as possible)....

From the moment you receive the essay question through to submission

Detail the fine details e.g. Seeing the essay question on Keats; Needing a coffee before doing X task.

Structure of Intervention vs Control

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Identifying Planning in Essay Writing

What is planning? Why is it an important meta-cognitive skill?

1. **Essential for Effective Learning**
2. **Setting Clear & Achievable Goals**
3. **Strategising Pathways to Success**
4. **Organises Study Time & Resources**
5. **Prioritises Tasks & Manages Deadlines**
6. **Fosters Proactive Learning**
7. **Prepares for Challenges**
8. **Reduces Academic Stress**
9. **Transferable to Professional Growth**



Structure of Intervention vs Control

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Listing stages of essay writing	Same
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Additional tips for supporting that meta-cognitive domain (plus GenAI prompts to try)	Same (without GenAI prompts)

Task 3: Identifying Planning in Essay Writing

Refer back to your stages of essay writing-
which items are associated with **planning**?

Structure of Intervention vs Control

Intervention	Control
Listing stages of essay writing	Same
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Get students in groups to link items in their 'stages of essay writing' list to the domain of metacognition	Same
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SMART GOALS (DEMONSTRATION)

GenAI prompt:

I'm planning to write an essay for my [subject/course name] and I want to set some SMART goals to guide my writing process. The essay topic is [insert essay topic here], and it needs to be [insert length or any specific requirements]. Could you help me formulate SMART (Specific, Measurable, Achievable, Relevant, Time-bound) goals that I can follow to ensure a structured and effective approach to writing this essay?

Structure of Intervention vs Control

Intervention	Control
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Using GenAI to create a timeline (Example activity)

I have a list of tasks for my upcoming essay project and I need help with planning and organisation. To ensure you have all the details needed to assist me effectively, could you ask me questions about each task? Here's my list of tasks: [Insert list of tasks]. Please ask me clarifying questions about these tasks so you can help me plan them efficiently, considering my deadline and available working hours.

Answer it's question, followed by "anymore questions?"

Keep going until questions don't seem sensible anymore, then ask:

I'm working on this essay and I need help with planning my remaining tasks. Today's date is [insert today's date], and my essay deadline is [insert deadline date]. I have [insert number of days] days left, and I can work on it for [insert number of hours] per week. However, I can't work on [state days unable to work on it]. Please consider the above list of the tasks, I will paste them again here: [Insert list of tasks]. Can you help me assign specific timings or dates to each of these tasks to ensure I complete my essay on time?

Structure of Intervention vs Control

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Additional tips for supporting that meta-cognitive domain (plus GenAI prompts to try)	Same (without GenAI prompts)

Goal Setting Exercise

Individually or in groups, allocate a few minutes to assign 'complete by' dates to all remaining essay writing tasks for your current coursework. Consider how long each task will take and determine the number of hours or days you will dedicate to each task.

Structure of Intervention vs Control

Intervention	Control
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Planning Skills Enhancement (TRY LATER)

Other planning activities you could try outside this workshop:

- **Staying Organised:** Think about which organisational tools are helpful, share ideas with peers and consider new tools you haven't tried yet.
- **Finding Resources for Essays:** Plan what relevant resources you need for your essays, including research papers, lecture content, module reading materials, forum posts, and notes from lectures.
- **Essay Structuring:** Create a template based on the arguments you plan to include and think in advance how to structure your essays accordingly.
- **Mind Mapping/Bullet pointing:** Mind mapping and/or bullet pointing your ideas helps organising thoughts and structuring the essay (and stops you going off on a tangent...).
- **GenAI suggestions**

Repeat for other meta-cognitive domains

- With relevant definitions, examples, activities, things to try later

Results

Meta-Cognitive Awareness:

- There were no significant baseline differences between groups in metacognitive awareness.
- Metacognitive awareness increased in both groups regardless of their condition.
- The intervention did not differ significantly from the control condition.

Essay Writing Anxiety:

- For essay writing anxiety, no significant main effect of time or group was observed.

Focus group findings:

- Comments around the intervention being supportive, interesting and motivating.
- Some surprise that the university is openly talking about AI.
- Students were keen to learn how to use AI responsibly (in line with uni guidance).
- Felt workshops were too long, could be split into 2 X 1-hour sessions.

Discussion/Implications

- Instructing students on using GenAI does not hinder meta-cognitive awareness compared to teaching without GenAI.
- Lack of observed effects in essay anxiety might be due to short-term follow-up.
- Longitudinal research is needed to explore the long-term impact of GenAI use on student outcomes.
- More extensive qualitative work will indicate how students feel about GenAI in the curriculum.
- Teaching meta-cognition is really valuable to support learning.

Where else can we think about meta-cognition?

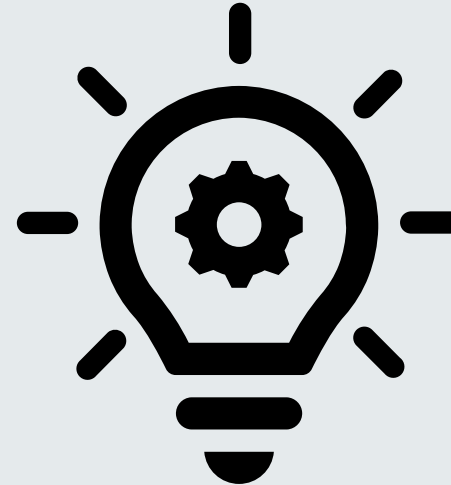
King's Festival of AI: Using GenAI to Enhance Understanding in Dissertation Projects

- How GenAI Tools Can Understand the Learner (prompt engineering; input vs output)
- How Learners Can Use GenAI to Deepen their Understanding (meta-cognition, where support is needed; hybrid intelligence)



What should we think about when teaching GenAI?

- Need to improve AI literacy (prompt engineering)
- Critical Evaluation
- Ethics
- Environmental impact
- Data privacy
- How can we support learners to use GenAI in a supportive manner that does not compromise their learning? – supporting the ‘**lightbulb moment**’!



Resources

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- King's AI in Education SharePoint: <https://tinyurl.com/j7ix62zt>
- Future Learn course (log in with KCL email for free access): <https://www.futurelearn.com/courses/ai-in-education/2>





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The use of Gen AI to facilitate collaborative story-telling

Dr Penny Simpson & Sarah Hamilton

Outline



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1. Introductions
2. Aim
3. Development of digital media artifacts
4. Design process
5. Insights, challenges and lessons learned
6. Any questions?

Introductions



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Aim of the project



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The aim was to develop a series of innovative online learning materials using a co-creation approach to engage learners through digital storytelling.

1. Being an online learner
2. Reflective practice
3. Team working online

An Innovation Education Fund (IEF) project



Why story-telling?



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Learning using a story-telling approach is “a process in which learning is structured around a narrative or story as a means of ‘sense making’” (AdvanceHE online 2024). Digital story-telling uses digital media.

When storytelling is formalized in thoughtful and meaningful ways it captures ... everyday moments and turns them into learning opportunities. (McDrury and Alterio 2003)

By employing a story telling technique tutors are seen as more “‘human’ and relatable. It creates an emotional engagement allowing the students to feel ‘connected’ (Choi 2018).



Digital story-telling



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Digital story-telling uses digital media. So, if we add the digital aspects to this:

“Digital storytelling combines the art of telling stories with a mixture of digital media, including text, pictures, recorded audio narration, music and video. These multimedia elements are blended together using computer software, to tell a story that usually revolves around a specific theme or topic and often contains a particular point of view”.
(Robin, 2016, p18)



Typical development of digital media artifacts



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Typically, the development of digital media involves a linear development approach and relatively limited collaboration with others. Often the content is decided by an academic(s) then translated by a learning designer into appropriate online learning materials



Re-imagining the development of digital media artifacts



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We sought to reimagine this model of delivery by fostering stronger co-creation and collaboration in a meaningful way. The challenge was to find a design and development approach that facilitated the collaboration, creativity and innovation needed to create engaging learning materials.



Initial use of ChatGPT



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Following online focus groups, interviews and discussion with students, student support, academics and subject matter experts we uploaded the Teams transcripts into ChatGPT.

We also uploaded academic slides and transcripts from other videos.

We asked ChatGPT to summarise into the following categories:

1. How to be effective
2. Things that facilitate
3. The barriers or challenges students face with
4. The support students need to be effective in....
5. The things students need to know about

Design workshop



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We held a design workshop using ChatGPT to aid the development of the learning “story”. Cross discipline workshops were held with the key academic(s), learning designers, students, key stakeholders and the digital media design team.



Use of ChatGPT in the workshop



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Initially, ChatGPT Plus was reviewed to ensure that the uploaded materials did not become part of the training database. Various prompts were used to then gradually refine the story that was produced to try to get the right balance of theory and application. This was very much an iterative approach in that each output was reviewed to understand how it differed from the last output and what needed to be changed for the next prompt.

Use of ChatGPT: example



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1st prompt: Please create a fictional story on reflective practice using the information from these slides

This produced a story that was in a medical context.

2nd prompt: Can you change the context to be an HR situation with employees in an organisation

This produced a very useful story suitable for an HR context with a mix of theory and application. We wanted to then include a definition of reflective.

3rd prompt: Please integrate an academically quoted definition of reflective practice into this story

A definition of reflective practice was included and the story can be seen in Appendix 1. This was a very helpful framework to prompt our thinking as to how we wanted the story to be further developed.

4th prompt: More prose and less bullets

5th Prompt: Please add more drama to the story such as a conflict. Add more obstacles that need to be resolved and how they are resolved

After these two additional prompts were included we were happy that we had a story-telling script on reflective practice that we could further develop into a digital media piece to prompt active learning on reflective practice.

Use of ChatGPT: co-creation



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In the design workshop the real strengths of co-creation could be seen:

- contextual discussions
- suggestion of back-stories for each of the characters in the stories
- agreement of media approach: script, visuals, narration

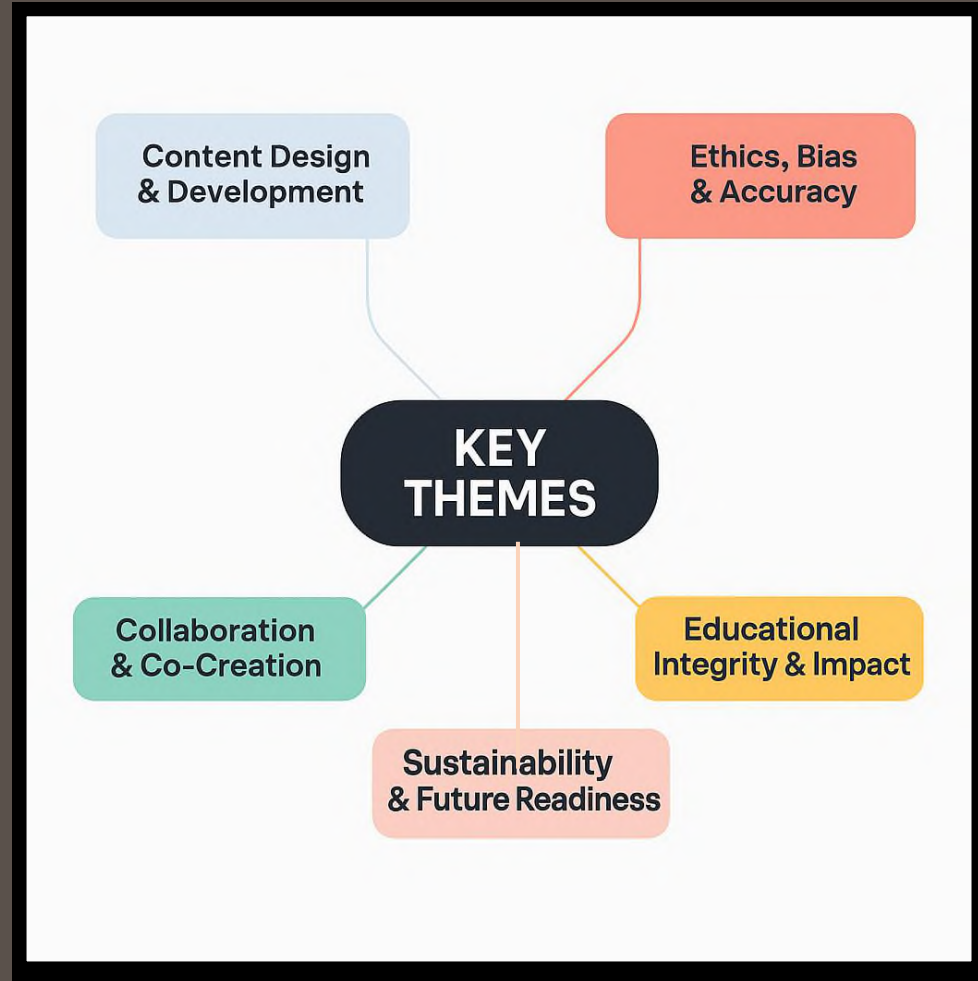
AI as a catalyst for innovation



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These workshops allowed for faster iteration, mutual inspiration, and a shared creative space maximising participant expertise. A shared understanding and respect of all elements of the design process was also achieved. Here, we will share insights, challenges, and lessons learned from using AI as a catalyst for innovation and co-creation in digital education and offer practical takeaways for others seeking to transform their online content.

Insights, challenges and lessons learned



Practical take-aways



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- Make AI part of the team (e.g. a real time, exciting and responsive script writer)
- AI can enable more constructive critique and openness amongst the team.
- Experimenting with AI can lead to serendipitous outcomes
- Allow AI to creatively develop more than you think is possible
- Keep an open mind – allow creative ideas to flow including from AI
- AI can create related stories keeping consistency of character and context



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Any questions?

Thank you!



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To find out more:

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sarah.hamilton@kcl.ac.uk

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BEYOND THE HYPE: INCLUSION & EQUITY CONSIDERATIONS IN THE USE OF AI IN BUSINESS SCHOOLS

Zsófia Tóth, Durham University, UK

Cristina Galalae, The Open University



Reimagining Education: The Future Of
Learning & Teaching Conference

London, 19th June 2025



OVERVIEW

Emerging literature in the areas of: (1) AI in Education and (2) Equity, Diversity and Inclusion

An exploratory multi-method study

Ethics of care as enabling theory

Exploring the impact that using AI in education has at societal level

Guidelines on developing more inclusive institutional policies on the usage of AI in education

THE INCREASING USE OF AI CAUSES A SEISMIC SHIFT IN HIGHER EDUCATION

- Authorship and academic **authenticity** – GenAI controversies (such as how student inputs are used/stored by AI platforms) and hopes (Aad & Hardey, 2024)
- **Assessment** options (Acar, 2024)
- **Digital divide** (Abu-Shanab, 2012; Thapa & Shein, 2018): access gap & even with access, understanding how to use AI tools effectively is not universal
- Impact of AI on **special need education** – personalised learning plans versus AI cannot replace individualised, human-centric teaching (Garg & Sharma, 2020)

AI AS A CATALYST FOR INCLUSION AND DIVERSITY

- **Algorithmic Fairness:** AI is less influenced by human prejudices (Pfeiffer et al. 2023)
- AI can help **identify and reduce performance evaluations bias** by detecting patterns of inequalities in datasets (Houser, 2019)
- AI-driven accessibility tools such as **Virtual Assistants** can provide real-time support for people with special conditions (Kumar et al., 2024)



INCLUSION AND DIVERSITY-RELATED CHALLENGES OF AI

- Potential **reinforcement of inequalities** if not carefully managed (Zajko, 2022)
- **Digital exclusion** may deepen with the increasing prevalence of AI (Helsper, 2012)
- **Algorithmic bias**: AI systems often reflect the inequalities present in the data they were trained on (e.g., gender, racial, linguistic) (e.g., Ghaskins, 2022)
- **Algorithm aversion** (Turel & Kalhan, 2023)



- **Some people trust AI more than humans** (anthropomorphisation of AI) (Ryan, 2020)

THE WIDER POLICY CONTEXT

The first principle of UNESCO's (2021) Rewired Global Declaration on Connectivity for Education is to “Centre the Most Marginalised”.



Digital education strategies should consider **how digital tools** (including AI tools) **can benefit disadvantaged groups as a strategic priority rather than an afterthought.**

RESEARCH QUESTION AND METHODOLOGY

How to develop guidelines for the use of AI in higher education that **enhance equity and inclusion** at **individual** (for students, educators, professional services), **organisational** (HE institutions) and **societal** levels?

An exploratory multi-method study including:

- (1) A **critical analyses of institutional policies and frameworks** guiding and regulating the usage of AI in UK universities by students, academics and professional service colleagues;
- (2) A **netnographic study** exploring the views and experiences of students, academics and professional service colleagues on / with the use of AI in higher education;
- (3) **In-depth interviews** with students, academics and professional service colleagues on their experiences of using AI and the role of extant institutional policies and frameworks guiding and regulating the usage of AI.

ENABLING LENS: THE ETHICS OF CARE

- The development of guidelines for the use of AI in education requires considerations of the **dependency** and **interconnectivity** of different actors and their relationship, aligning to moral questions that are central to the ethics of care.
- Compared to the ethics of justice, which prioritize fairness, individual autonomy and absolute standards of judgement and to virtue ethics, which places emphasis on one's character, **the ethics of care recognizes and prioritizes feelings and relationships over reasoning or integrity** (Simola, 2003).
- **Care** is defined as “a species activity that includes everything that we do to maintain, continue, and repair our ‘world’ so that we can live in it as well as possible” (Tronto 2013, p. 19).
- The ethics of care is **contextual, relational and embodied** (Andre and Pache, 2016).



APPLICATIONS OF THE ETHICS OF CARE

Gilligan (1982)	Three stages of caring involving a focus on: • care for the self • care for other(s) • care for both self and other.
Tronto (2013)	Four phases of caring: • caring about, referring to the acknowledgement and recognition of other's needs • caring for, involving taking (some) responsibility in relation to other's needs • care giving, the practice of actively working to address those needs • care receiving, the practice of understanding how care has been received.

ENVISIONED CONTRIBUTIONS

Our work contributes to the growing scholarship on AI ethics in education in two important ways:

- (1) We contribute to theorising the ethical implications of using AI in education at **individual, organisational and societal level**;
- (2) By engaging with the **ethics of care**, we offer a set of principles **guiding the development of more inclusive institutional policies and frameworks on the usage of AI** for educators, students, and society at large.



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SESSION 2 – TRACK 2: AI IN EDUCATION – PRACTICE

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SYMBIOTIC LEARNING IN THE AI AGE

Integrating Reflective Practice, Systems Thinking (DSRP), Enquiry, and
Quantum Cognition for Adaptive and Inclusive Education

Xavier Matieni, PhD

Overview

- ✓ Why traditional education must evolve
- ✓ The AI dilemma in academia
- ✓ Introducing Symbiotic Learning
- ✓ Theoretical foundations
- ✓ Core components and application
- ✓ Challenges, opportunities, conclusion

“We do not learn from experience... we learn from reflecting on experience.” – John Dewey

Have you ever seen someone ski around both sides of a tree—at the same time?



“Everything we call real is made of things that cannot be regarded as real.” Niels Bohr (1934), *Atomic Physics and the Description of Nature*

Is Traditional Education Preparing Learners—or Just Processing Them?

- Outdated models assume linearity
- Fails to address real-world complexity
- Lacks support for diverse learners

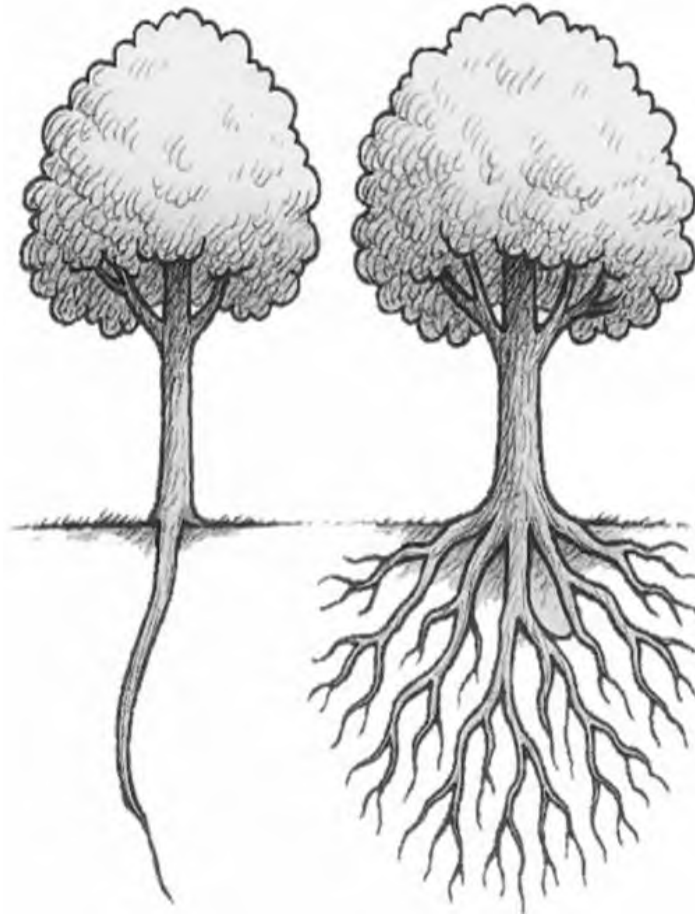
(Biesta, 2010; OECD, 2022)



The AI Dilemma in Academia

- Efficiency vs. Ethics
- Creativity vs. Automation
- Surveillance vs. Support

(Selwyn, 2019; Luckin, 2018)



Trees don't have one straight root, neither do problems.

Redefining Authorship

- Is AI helping or replacing thought?
- Where does co-creation end and plagiarism begin?

(Knox, 2022)

Wicked Problems in Learning

- Complex, context-dependent, non-linear
- No single solution

(Rittel & Webber, 1973; Horn & Weber, 2007)



A WISE STRATEGY...!



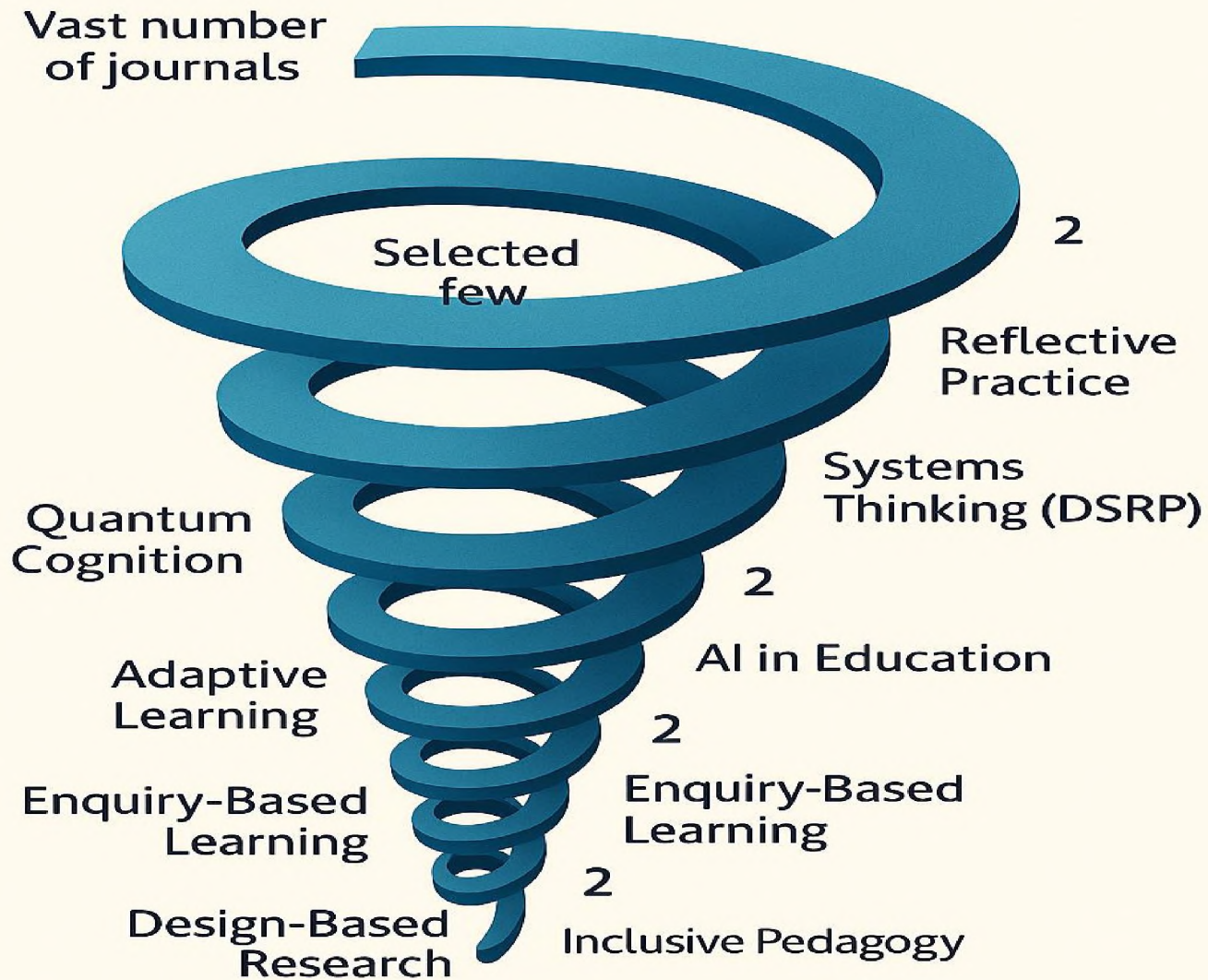
Theory of Bridge

“When there is little strength in the hand, it is ideal to lead from the weakest position.”

Kline M. (1953) *Mathematics in Western Culture*.
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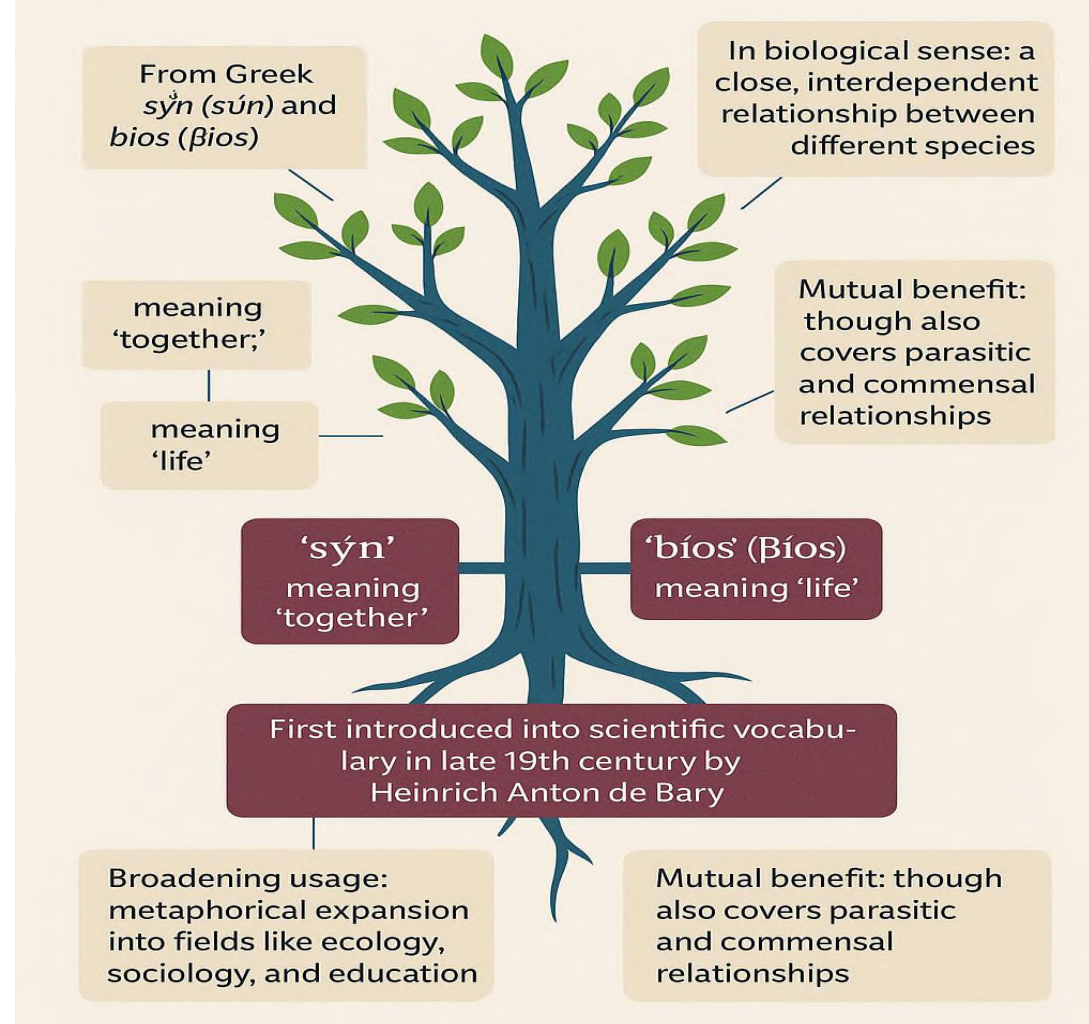
A young Simba not looking too impressed here, from The LION KING Movie

Thematic Systematic Literature Review



What is Symbiosis?

Etymological Definition of 'Symbiosis' and Its Use in the Context of Learning

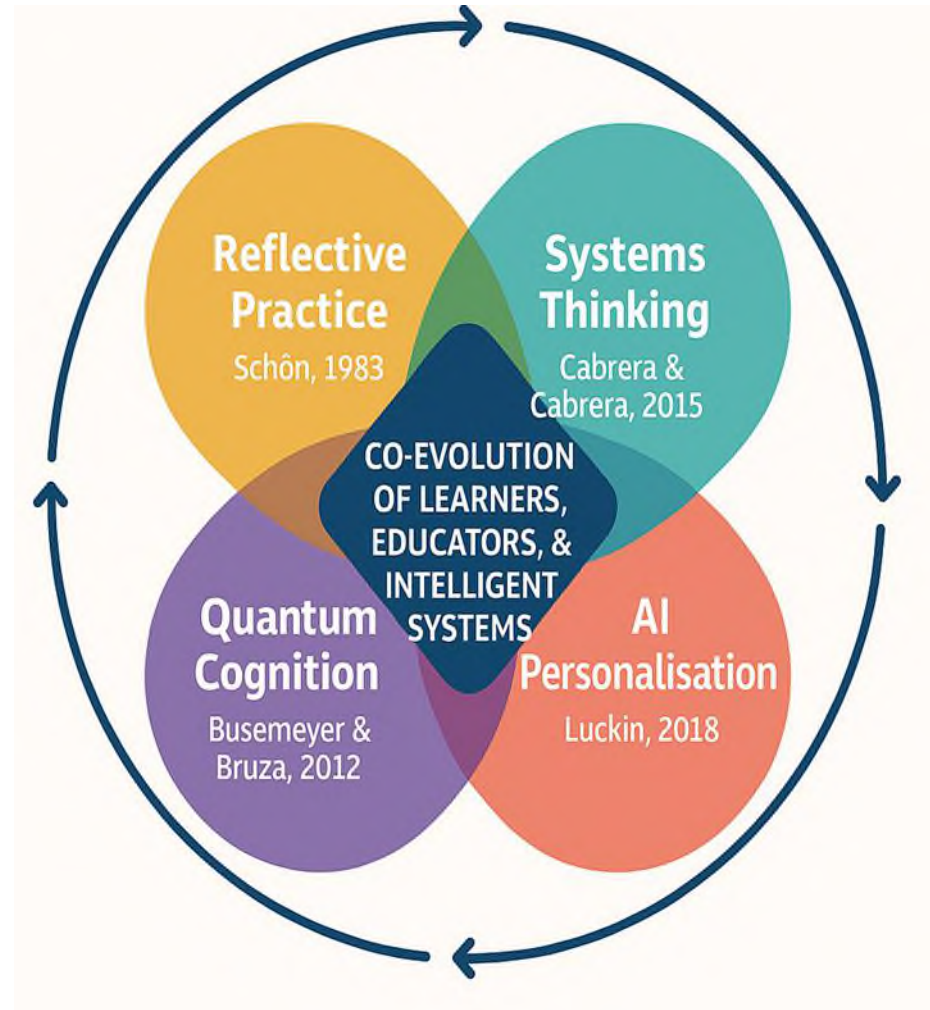


De Bary, H. A. (1879). *Die Erscheinung der Symbiose*.
Strasbourg: Karl J. Trübner.

Defining Symbiotic Learning

- An integrative model: learner, educator, AI
- Learning is co-created and negotiated

(Luckin, 2018; Cabrera & Cabrera, 2015)



Why Symbiotic Learning?

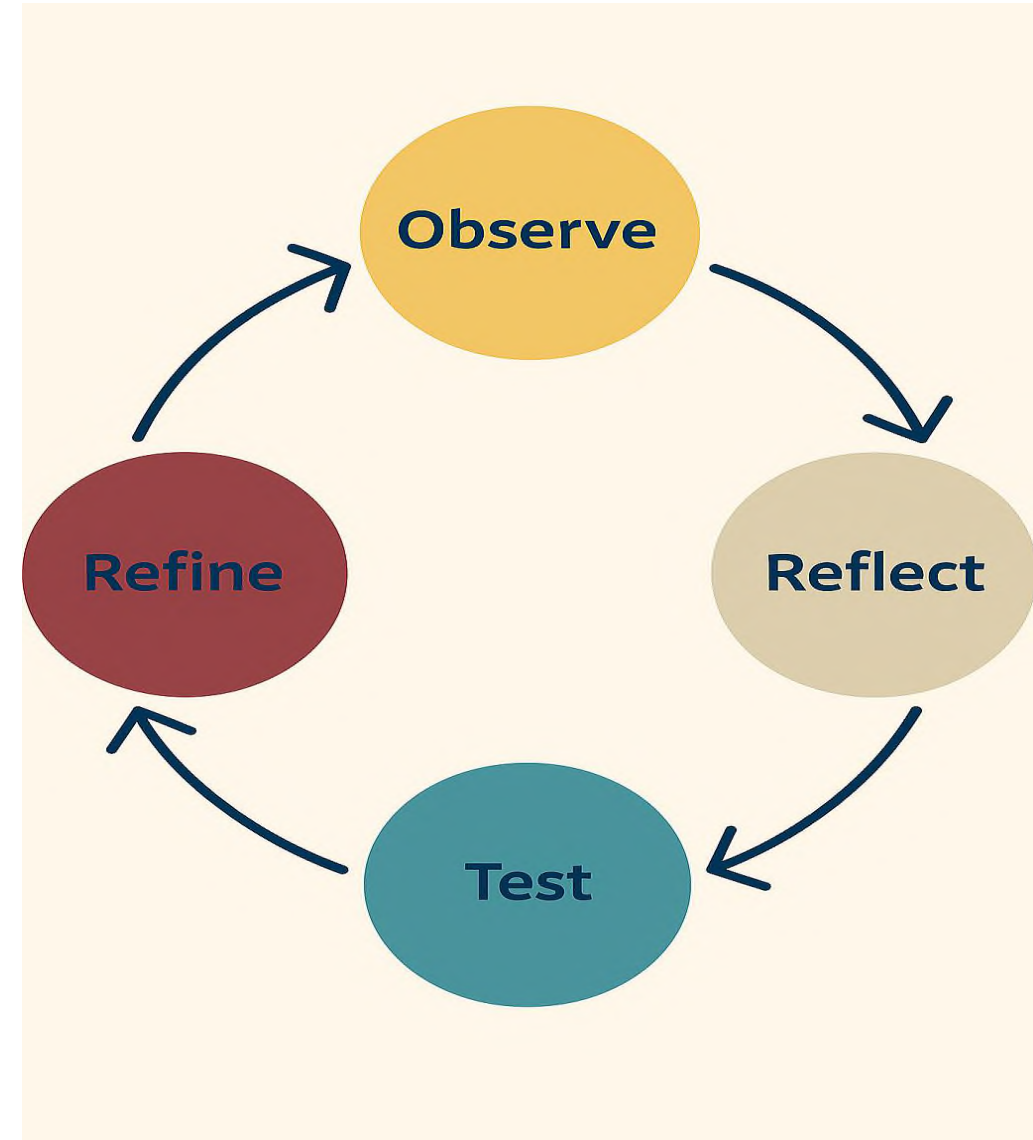
- Greater inclusivity
- Flexibility to adapt
- Cognitive scaffolding through AI

(Busemeyer & Bruza, 2012)

Reflective Practice Meets AI

- Schön's model: reflection-in-action
- AI enhances feedback loops

(Schön, 1983; Luckin, 2018)



Understanding Systems Thinking (DSRP)



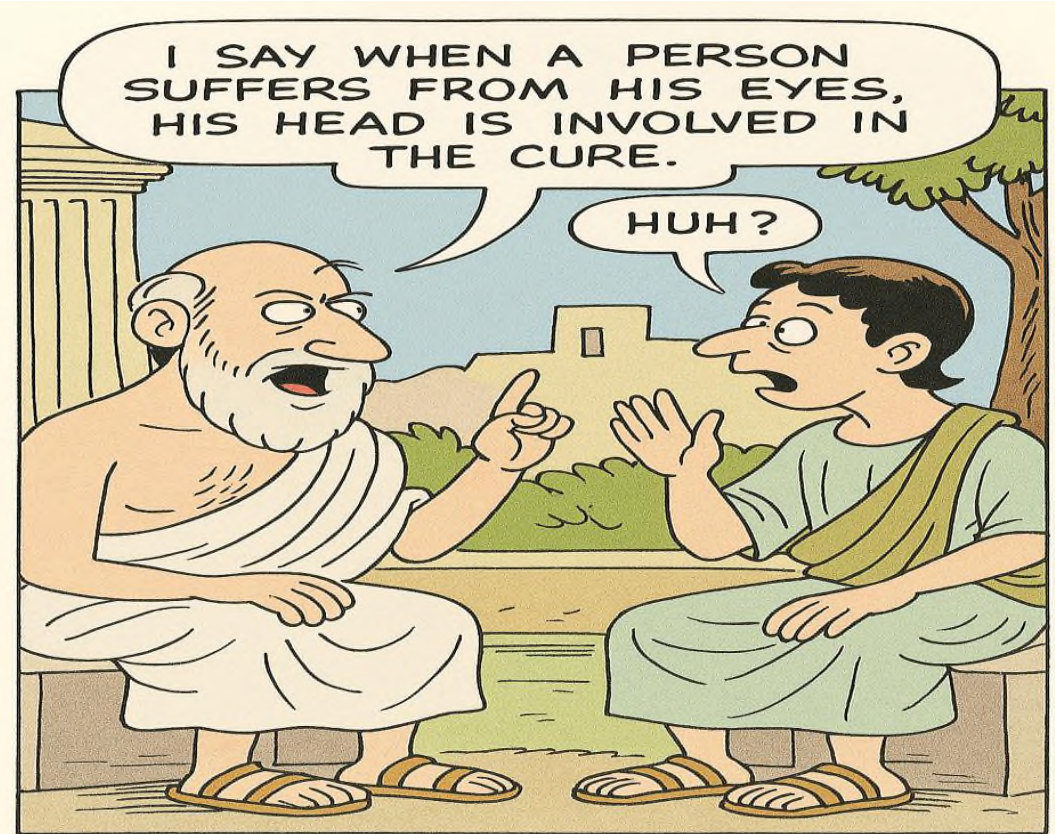
- Distinctions
- Systems
- Relationships
- Perspectives

(Cabrera & Cabrera, 2015)

Applying DSRP in Learning Design

- Modular planning
- Dynamic curriculum structure

(Cabrera & Cabrera, 2015)



MODULARITY

Plato. *Charmides*.

QUANTUM THINKING PRINCIPLES



Superposition Thinking

Hold multiple perspectives simultaneously before committing to a single solution—embrace complexity rather than binary logic.



Quantum Probability

Think in terms of probabilities, not certainties—decisions should evolve fluidly as new information emerges.



Entangled Thought

Recognise that issues are interconnected—what affects one part of a system inevitably influences the rest.



Observer Effect

The way you frame and examine a problem affects its outcome—your attention actively shapes reality.

Busemeyer, J. R., & Bruza, P. D. (2012). *Quantum Models of Cognition and Decision*. Cambridge University Press.

Dewey's Vision: Learning as Enquiry



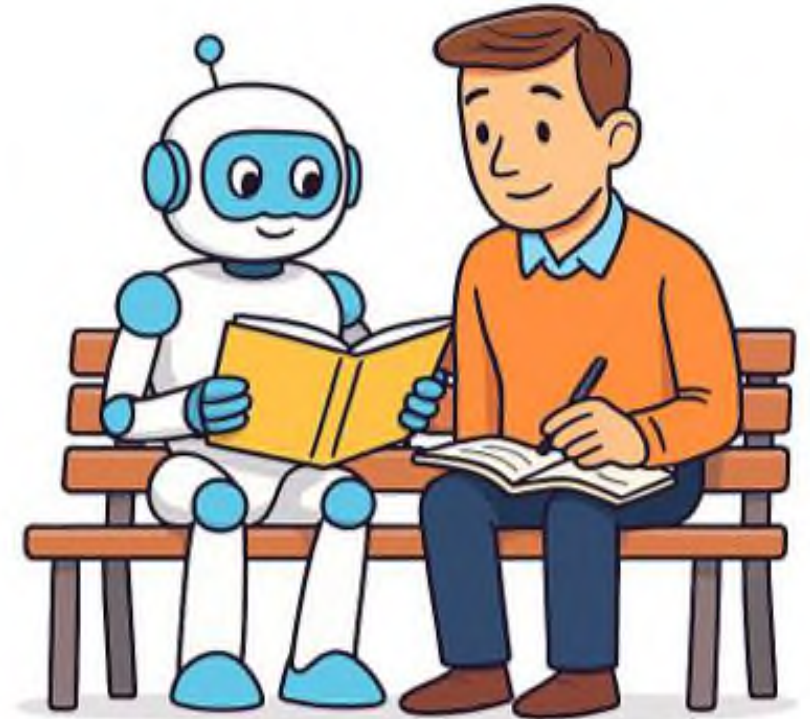
- Education should be **rooted in real-world experiences**.
 - Enquiry-based learning encourages hypothesis formation, testing, and reflection.
 - Learning should be **interactive, evolving, and student-centred**. Dewey (1938).
-
- Students as problem framers (Co-agents)
 - Human-AI Collaboration
 - AI suggests, doesn't solve (Healey et al., 2014)

Adaptive Learning with AI

- Personalised pathways
- Co-learning pathways
- Neuroadaptive learning analytics
- Augmentation, not replacement

(Selwyn, 2019; Williamson & Piattoeva, 2022),

(Holmes et al., 2022)



Inclusive Pedagogy



- Supporting neurodiversity
 - Co-owning learning identities
- (Artiles et al., 2011; Hooks, 1994)

Challenges and Opportunities

- Bias in AI
- Ethics in automation
- Scalability of symbiotic systems

(Eynon, 2022)

Towards a Symbiotic Future of Learning

- Partnerships in research
- Policy integration
- Cross-sector application
- Symbiotic Learning reframes not just how we use AI, but how we understand learning as co-evolutionary and deeply human.

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THE END

Thank You!

Let's Rethink Learning Together



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THE FUTURE OF LEARNING & TEACHING

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Reasonable Doubt: Why ChatGPT is not (quite) ready to grade and give feedback on law assessments

**Reimagining Education: The Future of Learning & Teaching
19th June 2025**

Dr Simon Sneddon
Associate Professor, Learning & Teaching
Deputy Head of Law
University of Northampton

Outline

Launch of ChatGPT triggered lots of debates.

Some positive – time saving, unlocking potential, work/life balance

Some negative – cheating, bias, environmental...

Today's focus: Using GenAI to mark student work

TopMarks, MarkingAI, Keath... and MarkGPT

Positives / Negatives of GenAI marking

Many academics don't like marking

Marking is part of who we are

If we do not mark, what are we *for*?

We will lose touch with our students

AI isn't as "good"

AI is quicker – "efficiency gain"

Saved time leads to job losses

AI does not get tired or frustrated

AI is consistent, not biased

Examples

Li, et al (2024)

Undergraduate computer science programming assessment.

Accuracy = how well AI matched human markers

Precision = how wide or narrow the variance was

Conclusion – “ChatGPT could be considered and utilised as a powerful marking supplement or assistant to human markers, rather than a replacement for the educators” (p13) or as a moderation tool

Examples

Flodén (2025)

Three postgraduate exams, Logistics and Transport Management

Test = comparing AI marking to human marking

Result = two sets of marks within 10% of each other >70% of the scripts

Examples

Morjaria et al (2024)

Undergraduate Medical programme, short-answer, formative assessments

No explicit standard of “efficiency”

Conclusion - “when benchmarked against expert human assessors, ChatGPT shows favorable Spearman correlations. This has the potential to have a significant impact on medical education as administrators continue to search for increasingly reliable, timely, and cost-effective grading solutions.” (pp39-40)

Examples

Steiss et al (2024)

Looked at quality of feedback, not grading

Human markers “well-trained, paid and relatively time-rich”

5 criteria, AI “outperformed” humans on 1 (criteria-based feedback), but all were close

Conclusion - “ChatGPT-generated formative feedback may be helpful given the present demands of providing timely feedback and the ability of teachers to contextualize and frame the use of ChatGPT for their students in non-experimental settings” (p8)

MarkGPT – outline

Zero published articles looking at AI marking in Law, lots associated with different aspects of AI and assessment.

Two modules, both undergraduate Level 5, 2023/4 cohort

One compulsory, one designated, 140 students in total.

One assessment from each – 48h time constrained and standard essay.

MarkGPT is a custom GPT based on ChatGPT4.

Restricted access, no data shared with LLM.

Looking at grading and feedback

MarkGPT – method

Action Research Project (Lewin, 1946)

Cycle 1: 25 scripts*

Cycle 2: 30 Scripts (3 AI-generated)

Grading: Statistical analysis using Excel

Feedback: Thematic analysis (Braun & Clarke, 2021)

MarkGPT – Grading results

Cycle 1.

Average human grading v average bot grading

Raw data: 12% exact matches, 28% within one grade

Flodén comparison - 80% were within 3 grades (10%)

Morjaria comparison - 36% exact matches and 60% within one “Morjaria” grade

MarkGPT – Grading results

Cycle 2.

Average human grading v average bot grading

Raw data: 10% exact matches, 30% within one grade

Flodén comparison - 69% were within 3 grades (10%)

Morjaria comparison - 40% exact matches and 47% within one “Morjaria” grade

Overall average across both modules as within 7%

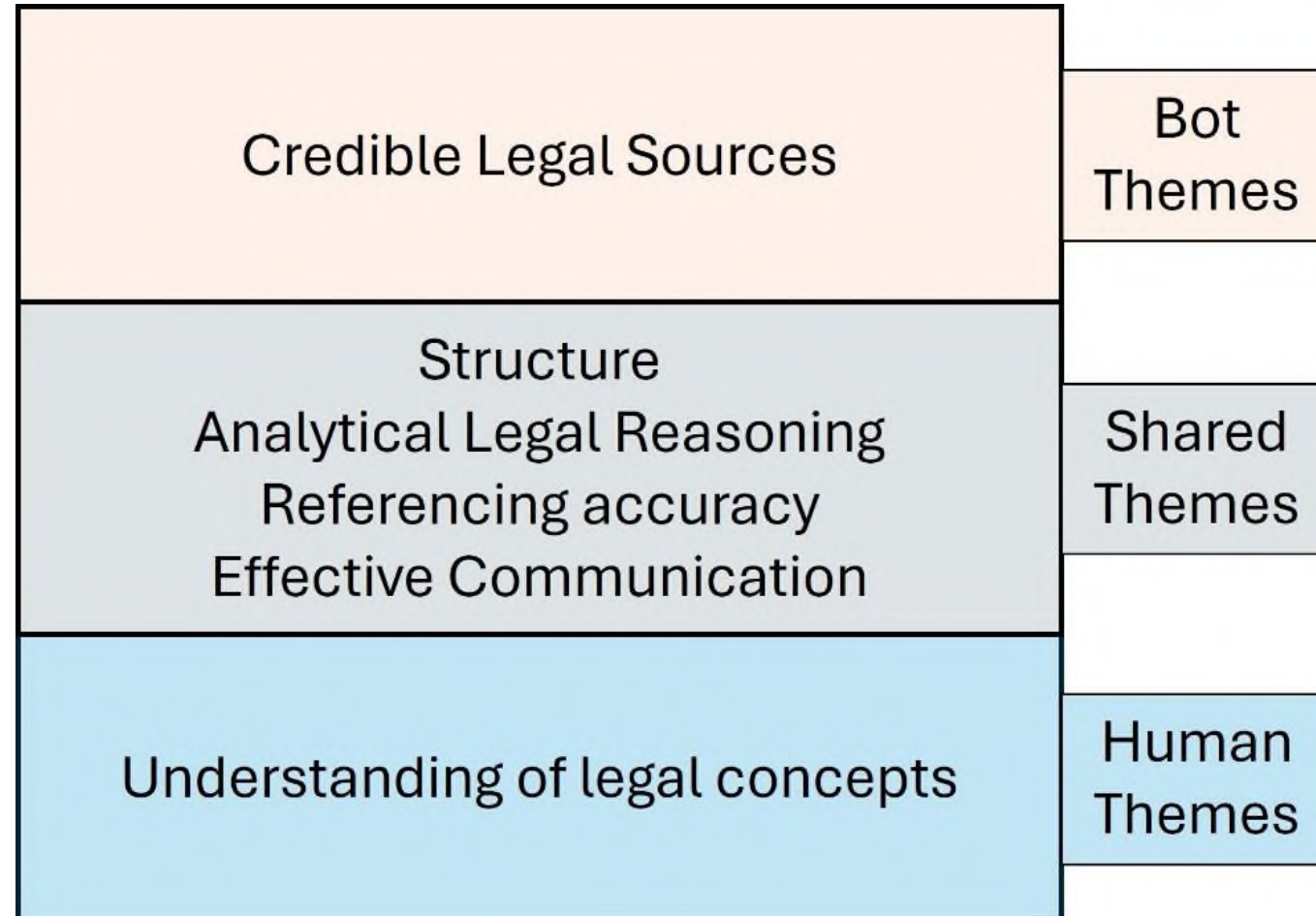
MarkGPT – Feedback Results

Cycle 1

Case studies without synthesis Tokenistic activism analysis Broken flow and transition	Bot Themes
Shallow Legal Framing Jurisdictional mismatch Referencing gaps and source quality Lack of critical thinking Underdeveloped due to brevity	Shared Themes
Weak thesis and essay structure Poor academic writing and clarity	Human Themes

MarkGPT – Feedback Results

Cycle 2



MarkGPT – Discussion

Time Saving

25 seconds to mark and feed back in Cycle 1, 30 seconds in Cycle 2

Human marker would take c18 hours (3 x 1,500 essays an hour)

BUT

Total time (set up, ethical approval, participant consent etc), 30+ hours

BUT

If integrated into VLE, no set up time etc.

MarkGPT – Discussion

Automation Anxiety

Time saving = cost saving, so safeguard need to be put in place to ensure this supports, rather than supplants academic staff.

Building on Blevins' (2024) dystopian vision, academic uses ChatGPT to write an article, module tutor professor uses ChatGPT to write lecture notes based on that article, and to set an assessment, student uses ChatGPT to write the essay, and the marker uses ChatGPT to mark and provide feedback.

And so on in a darkening spiral down to the academic singularity.

MarkGPT – Discussion

Accuracy and Currency

MarkGPT missed at least one “faked” reference

ChatGPT “My training data goes up to April 2023, and I also have limited knowledge of events and developments up to June 2024 thanks to updates after training.”

Copilot can access data via Bing, so more current,

Currency is crucial in the era of authentic assessment

MarkGPT – Discussion

Bias and Consistency

MarkGPT gave the same grade in only 21% of essays in the two passes in Cycle 1, even though the only difference in instruction was to replace “distinction, merit, commended, pass, fail” with “A, B, C, D, F”

MarkGPT did not attempt to assess any bias in the feedback of marking (all the assessed submissions were anonymous) but it is acknowledged that this is an area to consider.

MarkGPT – Conclusion

First two cycles demonstrate that for grading, MarkGPT is close – not enough to go solo, but perhaps as 2nd marker.

For feedback, 9 of the 16 themes identified are the same – again, not enough to fly solo

Perhaps (Ellison & Mehta, 2025) we look at MarkGPT as a new colleague, needing training in institutional approaches, subject specificities, “levelness” and so on.

If, and (more likely), when AI marking becomes more standardised, we must remember that it work for us, we do not work for it.

Reasonable Doubt: Why ChatGPT is not (quite) ready to grade and give feedback on law assessments

Thank you

Dr Simon Sneddon
Associate Professor, Learning & Teaching
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University of Northampton



Sources

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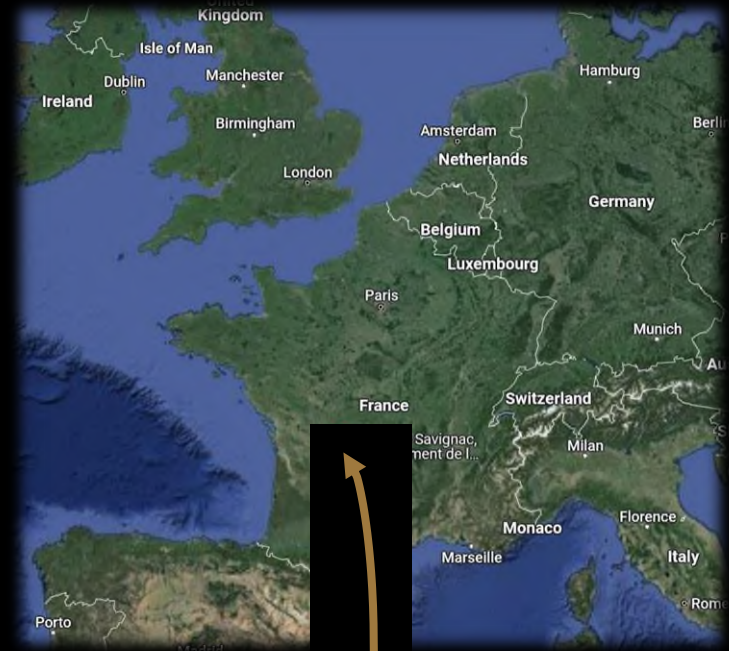
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Normalising the use of AI in hospitality education

Context

- Highly specialized
- Size
- Staffing model (23+120)
- Dress code



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Preparing students for management
careers in the hotel sector

where using AI is 'the norm'

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EDITORS' PICK | BUSINESS > RETAIL

Amazon-Marriott Deal Will Make Alexa A Hotel Butler, But The Implications Range Far Wider

By [Andria Cheng](#), Former Contributor. ○ I cover retail, from fashion to grocery, and its dance with...

Published Jun 19, 2018, 05:30pm EDT, Updated Jun 20, 2018, 02:15pm EDT

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⏸ This article is more than 6 years old.



Order for maid service? Soon, you may be able to ask Amazon's Alexa. The online giant will roll out... [✦]

Amazon.com turned heads with its latest move on Tuesday: partnering with Marriott International to feature its Echo smart speakers at select hotels, part of its new Alexa for Hospitality initiative.

But the announcement is not just about hotel guests' ability to use Alexa-powered Echo voice assistants to order room service, call for two more towels or adjust the room temperature and

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Hilton and Be My Eyes Launch Industry-First Partnership to Enhance the Hilton Stay for Guests who are Blind or Low Vision



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The exclusive partnership brings **AI-powered virtual assistance** and dedicated Hilton Reservations and Customer Care support to Be My Eyes users across the U.S. and Canada

Soft Skills, High Tech: How Hilton And SweetRush Created A Generative AI Coaching Experience

For Guest Service Training



By [Tiffany Vojnovski](#)

Updated: January 23, 2025

11 minutes to read



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Americas

Recognizing food waste is a significant opportunity for the industry, Hilton has deployed Winnow, an AI-powered food waste management platform, in nearly 200 hotels globally to track, analyze, and cut food waste. This technology is helping kitchens identify patterns, reduce overproduction and rethink traditional service models.

In the hotel industry, AI is already 'the norm':

Reservation: **revenue management** (*'dynamic pricing'*)

Front office (reception) incl. facial recognition

Housekeeping ('smart scheduling', quality control with computer vision, cleaning robots, inventory, linen management, resource optimization etc)

Bedrooms: « Smart rooms »

Back office:

- waste management
- energy management
- predictive maintenance
- security/surveillance

Preparing students to be leaders
and managers in this sector

where AI is already very present

What we are doing already?

« **Demystifying AI** »

Using AI **in class** with students *(whilst acknowledging the limits)*

Examples:

1. Chatbots to generate ideas
2. Simulate “real-world” hotel scenarios for practice – and “virtual hotels”

Encouraging students to use AI **outside of class** (24/7 private tutor)

Allowing students to use AI for their **assignments**

Other ideas for next year

- To provide better training about '**prompt engineering**'
- To prepare for **interviews** (*professional & postgraduate*)
- To support **language** learning
- To help develop '**industry** knowledge' (*e.g. about trends*)
- To help develop **soft skills** like communication, empathy and problem-solving
- To **encourage** all **academics** to use AI more systematically

What does it imply?

Training and upskilling (for all students and all staff)

*to use AI tools (for analysing guest data, reviews and operational metrics)
– not just chatbots*

Having a better **AI policy** (for all students and all staff)

Redesigning **some of the assessment strategies**
(going back to the learning outcomes)

My own practice

My 4 metaphors of AI

=

How I conceptualise AI

Metaphor #1



Metaphor #2



Metaphor #3



Metaphor #4



Examples
of how I use AI with students

Example #1

Can you give me ideas about sustainable practices for a breakfast buffet in a hotel?

Certainly! Offering a sustainable breakfast buffet in a hotel is a wonderful way to delight guests while minimizing environmental impact. Here are some eco-friendly practices you can consider:

1. **Non-Packaged Food (Zero-Waste):** Avoid prepackaged single portions and plastic. Instead, use glass containers and dispensers for items like honey, jam, sugar, cereals, and yogurt¹.
2. **Local and Organic Ingredients:** Opt for organic food and include local recipes. Highlight typical desserts from your area and showcase local produce. Supporting local suppliers reduces transportation emissions and connects guests to the region¹.
3. **Accommodate Dietary Needs:** Offer vegan alternatives, gluten-free products, and healthy options. Cater to all guests, including those with allergies or intolerances. A variety of tasty and low-calorie dishes can appeal to different preferences¹.
4. **Create the Right Atmosphere:** Beyond food, consider the ambiance. Music, tablecloth colors, mise en place, and a warm environment contribute to a gentle awakening and a memorable experience¹.

Example #2

I need to organise a bar-mitzvah.
How can I make sure it is sustainable?

🔑 Sustainable Bar Mitzvah Planning Guide

1. Venue Selection

- Choose a location that prioritizes sustainability (e.g., LEED-certified buildings, venues with recycling programs).
- Consider hosting outdoors or in a community space to reduce energy use.

2. Eco-Friendly Invitations

- Use digital invitations (e.g., Paperless Post, Evite) to reduce paper waste.
- If you prefer printed invites, use recycled paper and soy-based inks.

3. Sustainable Catering

- Opt for local, seasonal, and organic food.
- Minimize meat-heavy menus or offer vegetarian/vegan options.
- Avoid single-use plastics — use compostable or reusable dishware.

4. Decorations

- Use reusable or rented decorations.
- Avoid balloons and plastic confetti — try fabric bunting, potted plants, or upcycled decor.

Example #3

Padlet



Loykie • 26 • 3mo

What are the limits of IA to learn about sustainable development?

Eva

AI is a very useful and practical tool in current life. It's very cool when you want to find a plan or some original ideas. The problem is that you have to know how to use it correctly and also this tool is programmed to satisfy you, so sometimes it generates fictional information just to make you happy

♥ 1

Elliot

AI helps a lot in travel, but it has some limits. One big challenge is making trips as personal and special as when people help plan them. AI might not understand individual likes, cultural differences, and feelings very well. Also, AI needs lots of data, but using so much personal info can raise privacy issues. It's important to be careful with people's private stuff. AI can

Alexis

Chat gpt is a very good tool when you know how to use it properly and are aware of its limitations. When looking into this question, it's worth pointing out that chatgpt doesn't take the current situation into account, makes no judgements and is very neutral, so it doesn't tell you everything. In addition, you need to know that chat gpt is designed to satisfy you, which is why it will not respond in the same way depending on the language you use.

♥ 3

Inês

The limits of intelligence are unlimited but at the same time limited. Unlimited because they can translate them to you in all possible languages and look for you information acquired. While limited because they will invent information when they will not have the answer

Arthur

We can see that chatgpt can answer with facts, but struggle to give some facts about humanity, feelings. However, if we ask him to go further, it can maybe help you about this.

♥ 1

ADELE and BIANCA

AI models such as chatgpt can sometimes fail to understand exactly what we're looking for, particularly when it comes to cultural or region-specific information, and therefore give us information that lacks precision or doesn't quite address the desired subject.

But it also relies heavily on the data it has been trained on. If there are gaps or biases in the training data, the AI may provide incomplete or skewed information. Tourism is a dynamic industry with trends that can change rapidly, sometime the problem can be that the data are not

Example #4



Example #5

Sustainable development exam (1 hour)



**HOW SUSTAINABLE IS YOUR
WORKPLACE?**



**EVALUATE THE PRACTICES
IN PLACE.**



**MAKE RECOMMENDATIONS
TO MAKE IT EVEN MORE
SUSTAINABLE.**

Dissemination

Sharing (good) practice

Initiating discussions

5. Openly using AI in a French Hotel Management School: Learning about Sustainability, Including all Students and Challenging the Narrative

Authors: Loykie Lominé, Raphaël Taillandier and Alexis Bontems

Institution: École de Savignac, France



UNIVERSITY
of HULL

An AI-generated hotel

to learn about sustainable development

LOYKIE LOMINE, EDUCATOR

ECOLE DE SAVIGNAC (HOTEL SCHOOL)

FRANCE

Description of your learning resource or course:

This learning resource is a fictional hotel I designed to help students learn about key aspects of sustainable development. Each room is themed after a famous painter (Vincent Van Gogh, Frida Kahlo, Michelangelo, Kandinsky, Francisco Goya, Georgia O'Keeffe, etc.) and the images are intended to stimulate discussions about a range of issues. For instance, the Van Gogh twin room can lead us to explore the sustainability of rattan furniture (chair and storage basket): it may seem more environmentally friendly than plastic, but is it truly sustainable? Or how about the blue carpet – was it crafted using natural indigo dye?

This resource offers four advantages:

- It is visual, which is particularly valuable as the topic of sustainable development can often feel theoretical and abstract.
- It is playful, as the images are obviously created by AI in the style of famous artists, which adds an element of creativity.
- It is tailored specifically for my students of Hotel Management, allowing me to address specific issues relevant to our curriculum.

- It is not finite; I plan to add more rooms to address other aspects, as well as images related to the restaurant and kitchen, the lobby, the paperless reception etc.

Context in which the learning resource was created:

All students are pursuing a BA in Hotel Management. In their final year, my course (11 ECTS) gives them the opportunity to learn about sustainable development, both in theory and in practice. I designed this resource to complement other materials that we use, such as videos, professional publications and academic articles.

As hotels worldwide are implementing many green initiatives, from smart showers to eco-friendly cleaning supplies, finding examples online is very easy - however, I wanted to create my own coherent pedagogical resource that I can continue to personalise and develop.

AI tool(s) used:

DALLE

Key learnings and recommendations for others:

Using image generators like DALL-E is fun, but the results can be erratic, leading to potential frustration. With Bard and ChatGPT, one can learn rapidly how best to formulate effective prompts - but DALL-E has an element of unpredictability. For example, in my prompt for the Van Gogh room, I explicitly included the instruction focus on a glass jar full of water and two glasses, as I wanted to

illustrate the use of glass instead of plastic. This specific detail was ignored in all the AI-generated variants.



Hotel bedroom with twin beds, blue carpet, rattan chair, and Van Gogh-style paintings on yellow walls

July-August A research paper/publication with one of my students

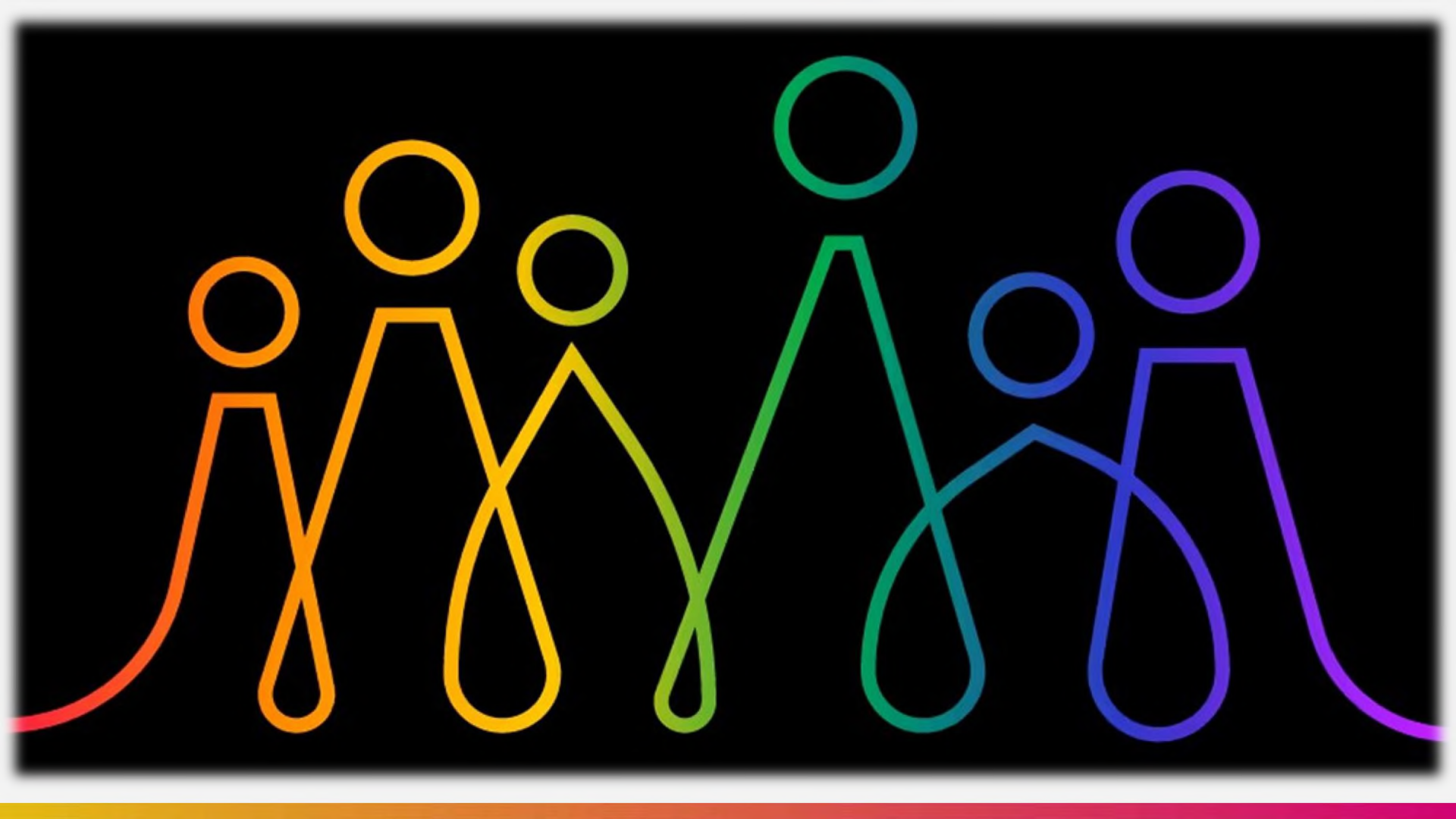
September Final, revised version of AI Policy

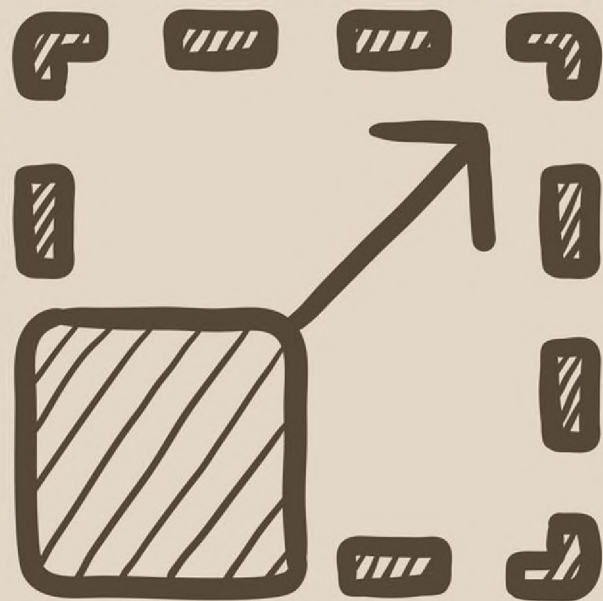
October *“Try something else with students”*



Normalising the use of AI in hospitality education

Back-up slides





Opinion · Property Technology

The Guest and The Agent: How Artificial Intelligence Will Reshape Hospitality Behaviors



By Alan Young

VP, Strategy | Hospitality, Infor
8 min read · 16 May 2025

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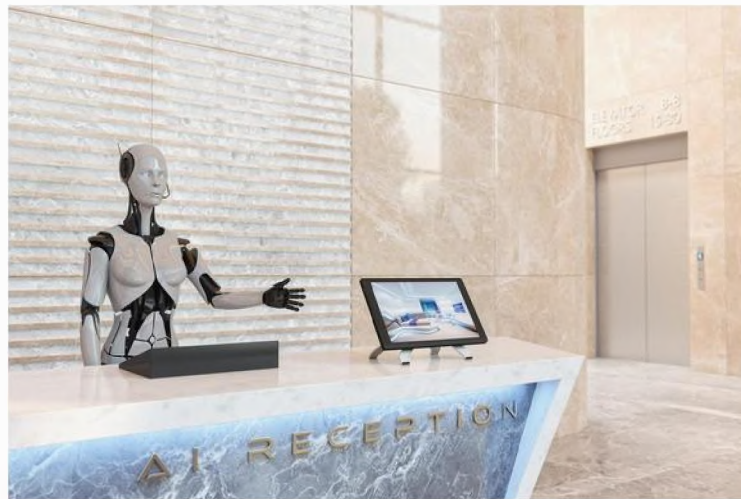
INNOVATION > AI

AI In Hospitality: Elevating The Hotel Guest Experience Through Innovation

By Neil Sahota, Former Contributor. © Neil Sahota is a globally sought after speaker and business ...

Published Mar 06, 2024, 10:00am EST

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Robot assistant on modern hotel / office reception.

GETTY

The integration of Artificial Intelligence (AI) into the hospitality sector marks a significant shift in how hotels deliver customer service. In an industry where personalized experience is

Example #5

Jules Chamoulaud • 14d

Rugby



Jules Chamoulaud
14 days ago



Why is not sustainable



Rugby still has a significant environmental impact. International matches require frequent flights, increasing carbon emissions. Stadiums use large amounts of energy, and matchdays generate a lot of waste. Merchandise and food are often not locally sourced. Without major efforts to reduce its footprint, rugby cannot be



Jules Chamoulaud
14 days ago



Rugby



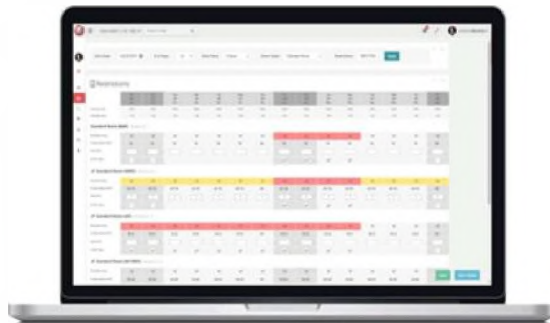
Rugby can support sustainable development by promoting values such as teamwork, respect, and inclusion. Environmentally, stadiums can reduce their carbon footprint through renewable energy, waste management, and local food sourcing. Rugby events also engage communities and encourage social cohesion. By adopting greener

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