iBEE CONFERENCE WORKSHOP | DAY 2 | 01:00 PM – 01:45 PM | LECTURE HALL

The Psychology of Preference (PoP)

Helping HE Educators Reframe Student Engagement, Assessment Authenticity and Professional Identity in Post-GenAI Construction Education

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"What convinces us that a technically strong student output reflects true understanding?"

Output Competence Does Not Equal Reasoning Visibility in Post-GenAI Education

1. THE POST-GENAI REALITY

Plausible Outputs at Scale

Generative AI tools can now produce technically plausible, linguistically polished, and contextually relevant submissions in seconds.

Traditional product-focused assessment can no longer differentiate between authentic student reasoning and AI-generated outputs.

2. THE PEDAGOGICAL GAP

Opaque Judgment Pathways

A polished final artefact (cost plan, report, model) provides incomplete evidence of whether the student understands:

- Core underlying assumptions
- Trade-offs & rejected options
- Contextual uncertainties
- First-principles reasoning

3. THE CORE CHALLENGE

Moving Beyond Product Detection

How can educators design learning experiences that make the formation of professional reasoning articulable and examinable?

Authentic assessment alone does not guarantee protection against GenAI-mediated production.

FRAMEWORK ORIGIN

Digital Estimating Operations Obscured First-Principles Judgment in Quantity Surveying

The BCIS Order-of-Cost Estimating Classroom Observation

- **Software Navigation vs. Conceptual Grasp:** Students navigated BCIS (Building Cost Information Service) software effectively to generate plausible order-of-cost estimates.
- **Opaque Comparator Selection:** Students selected historical comparator projects from BCIS database without establishing or articulating their underlying assumptions, biases, or rationale.
- **Obscured First Principles:** Classroom questioning revealed that output competence masked a weak understanding of comparison judgments, specification adjustments, and market trade-offs.

The Key Pedagogical Insight

"The educational concern was not simply whether students could obtain a plausible cost figure, but whether they could articulate how that figure had been constructed from first principles."

How PoP Emerged

PoP was created directly to bridge this gap: using an initial project choice or comparator preference as a low-stakes entry point to elicit, examine, and refine learner-articulated reasoning.

ACTIVITY 1 — EXPERIENTIAL LEARNING (10 MINS)

Redesigning Assessment for Learning Assurance: Select Your Initial Preference

WORKSHOP PROMPT: You are redesigning an assessment in a construction module where students legitimately use GenAI. Which source of learning assurance do you initially prioritise?

(A) Polished final submission | (B) Short oral viva | (C) Annotated reasoning trail | (D) Staged checkpoints | (E) Other approach

Step 1: Individual Note (3 Mins)

Select 1 option (A–E) and record:

- 3 main considerations shaping your choice
- 1 alternative you seriously considered
- 1 assumption you are making
- 1 point of uncertainty

Step 2: Pair Exchange (5 Mins)

Walk your partner through how you arrived at your choice.

CRITICAL INSTRUCTION:
Do NOT persuade your partner that your answer is right. Focus entirely on reconstructing your reasoning path.

Step 3: Room Harvest (2 Mins)

We will identify:

- Two participants who chose the SAME option for entirely DIFFERENT reasons
- How implicit priorities surface through explanation

Eliciting the Reasoning Path Surfaces Assumptions and Shifted Perspectives

Asking Students to DEFEND ("Why is this right?")

- **Positional Commitment:** Encourages retrospective justification and ego-defensiveness.
- **Conceals Uncertainty:** Students mask gaps, uncertainties, and unexamined assumptions.
- **High-Stakes Tension:** Frames dialogue as an interrogation, triggering defensive postures.

PoP Approach: EXPLAIN ("How did you arrive there?")

- **Reasoning Visibility:** Surfaces initial considerations, trade-offs, and comparison logic.
- **Psychological Safety:** Creates space to acknowledge uncertainty, biases, and alternatives.
- **Pedagogical Entry Point:** Preference opens the door; articulated reasoning becomes the object of learning.

CONCEPTUAL FRAMEWORK

Preference Is the Low-Stakes Entry Point into Articulated Professional Reasoning

CORE PROPOSITION

"A preference, choice, or initial professional position becomes pedagogically valuable when it is used as an entry point through which a learner articulates how an emerging judgment has been formed."

WHAT POP IS

✓ An educator-facing pedagogical design framework

✓ A structured route into explanation, assumptions, and professional connection

✓ A human-centred approach that coexists with GenAI & software

✓ A theoretically grounded proposition requiring empirical evaluation

WHAT POP IS NOT

✗ NOT a psychological diagnostic tool, personality test, or psychometric test

✗ NOT a claim that preference itself demonstrates competence or capability

✗ NOT a demand that learners defend their first answer

✗ NOT an anti-AI or technology-exclusion framework

The Refined 6-Stage Iterative Cycle: From Initial Choice to Refined Judgment

1. PROMPT
Low-Stakes Entry Point

Core Question: "What is your initial preference or position?"

Introduce a low-stakes professional or symbolic choice linked to learning outcomes.

2. EXPLAIN
Reconstruct Pathway

Core Question: "How did you arrive at this position?"

Elicit the reasoning pathway before evaluation.

3. UNPACK
Surface Assumptions

Core Question: "What shaped your reasoning?"

Probe assumptions, rejected alternatives, trade-offs, and uncertainties.

4. CONNECT
Professional Discipline

Core Question: "How does this relate to professional standards?"

Bring disciplinary standards, evidence, and contextual reality into dialogue.

5. EVIDENCE
Proportionate Artifact

Core Question: "What evidence represents this reasoning?"

Provide a suitable, proportionate mode for making reasoning revisit-able.

6. REFINE ↺
Iterative Development

Core Question: "What, if anything, would you now reconsider?"

Retain, modify, or replace the initial position in light of learning.

Nine Essential Guardrails Protect Learner Ownership and Psychological Safety

1. No Diagnosis
Do not infer personality, ability, or suitability from preferences.

2. Learner Ownership
Ask what choice means to learner; do not assign meaning.

3. Psychological Safety
Challenge reasoning without humiliating the learner.

4. Voluntary Depth
Reflection must not become compelled personal disclosure.

5. Cultural Humility
Avoid assigning cultural explanations unless learner identifies them.

6. Assessment Caution
Assess quality of reasoning & professional connection, not choice.

7. Accessible Modes
Allow oral, written, paired, or visual routes of expression.

8. Epistemic Humility
Treat explanations as articulated accounts, not total cognition.

9. Openness to Revision
Legitimise retaining, modifying, or replacing initial positions.

ACTIVITY 3 — HANDS-ON REDESIGN (6 MINS)

Mapping PoP to Your Teaching: Identifying Meaningful Professional Judgement Points

REDESIGN TASK

Select 1 Real Activity From Your Teaching:

- Seminar task or group exercise
- Quantity surveying cost-planning activity
- Apprenticeship workplace review
- Site-visit reflective log
- AI-aware assessment checkpoint
- Professional viva preparation

THE 7 REDESIGN QUESTIONS (Worksheet)

- **1. Judgement Point:** Where must students genuinely interpret, prioritise, or choose?
- **2. Prompt:** What initial preference or position will you invite?
- **3. Explain:** What question will you ask instead of 'prove you are right'?
- **4. Unpack:** Which assumptions, trade-offs, or uncertainties will be surfaced?
- **5. Connect:** What disciplinary standards or evidence must reasoning meet?
- **6. Evidence:** What is the minimum proportionate evidence needed?
- **7. Refine:** What new condition or feedback could allow reconsideration?

ACTIVITY 4 — PEER REVIEW & BOUNDING (6 MINS)

Critical Peer Testing: Bounding and Strengthening Activity Design

1. Meaningful Judgement Point

Does the activity contain a genuine interpretive or professional choice, rather than a trivial preference or single procedural answer?

2. Reasoning Visibility

Does the prompt compel the learner to reconstruct HOW they arrived at the position, rather than jumping into retrospective justification?

3. Professional Discipline

Does the Connect stage bring learner reasoning into active dialogue with professional standards, evidence, and context?

4. Ethical & Practical Fit

Is the activity psychologically safe, non-diagnostic, accessible, and proportionate in workload for both student and educator?

PEER REVIEW RULE: Give 1 actionable recommendation to make your partner's design safer, sharper, or more proportionate.

CURRICULUM INTEGRATION

Deploying PoP Selectively Across Modules, Apprenticeships, and AI Checkpoints

QUANTITY SURVEYING & COST PLANNING

BCIS Comparator Selection

Students select historical projects and justify adjustments for time, location, specification, and market risk—making underlying assumptions explicit.

DEGREE APPRENTICESHIP EDUCATION

Unpacking Workplace Routine

Turns 'this is how my company does it' from an unquestioned habit into an examined position—evaluating applicability across different project contexts.

AI-AWARE ASSESSMENT CHECKPOINTS

Evaluative Judgment around AI

Examines which AI-generated recommendations students accepted, rejected, or modified, providing evidence of critical relationship with technology.

VIVAS & SITE REFLECTION LOGS

Professional Identity & Voice

Used in site visit reviews and project vivas to help learners articulate their emerging professional stance and rationale under uncertainty.

STRATEGIC RULE: Deploy PoP selectively at consequential judgment points, rather than mechanically across every task.

WORKSHOP SUMMARY & COMMITMENT TO ACTION

"Preference opens the conversation; reasoning is where the educational work begins."

The essential move in post-GenAI construction education is shifting from asking students to 'prove they are right' to inviting them to reconstruct 'how they arrived there'.

YOUR IMPLEMENTATION COMMITMENT

Where, in one real upcoming teaching context, can you trial PoP without redesigning an entire module?

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