

[RE]IMAGINE EDUCATION

A weekly Design.AI newsletter



FROM AI FOR FUNCTIONAL PURPOSE TO WORKFLOW

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In this issue of *[Re]Imagine Education*, we move from conversation to practice—exploring how AI can be integrated not just as a tool, but as part of a **strategically designed workflow for learning, thinking, and decision-making**.

This issue features a hands-on workshop on *AI for Course Redesign*, which brought together faculty to redesign courses using Generative AI (GenAI). More importantly, the session surfaced a critical shift: from experimenting with tools to **designing workflows anchored in learning outcomes and human judgment**.

Building on this, we introduce a practical framework—**Outcomes → Workflow → Tools → Discernment**—and show how it can be applied across teaching, student learning, and professional practice. Through real examples, we highlight how AI can support deeper thinking when used with intent.

As AI becomes increasingly embedded in our everyday work, the question is no longer whether to use it—but **how to design with it meaningfully**. This issue invites you to rethink your own workflows—and to join a growing community exploring what it means to learn and work in the age of AI.

This newsletter is produced with ChatGPT and other AI tools as super-collaborators. The authors contribute the core ideas, drafts, strategic framing, pedagogical insights, and design direction, while AI supports by refining, formatting, and creative articulation. (CC BY-NC-ND 4.0).

Editor of Newsletter:

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Are We Designing Learning or Just Using AI?

AI adoption across universities is accelerating.

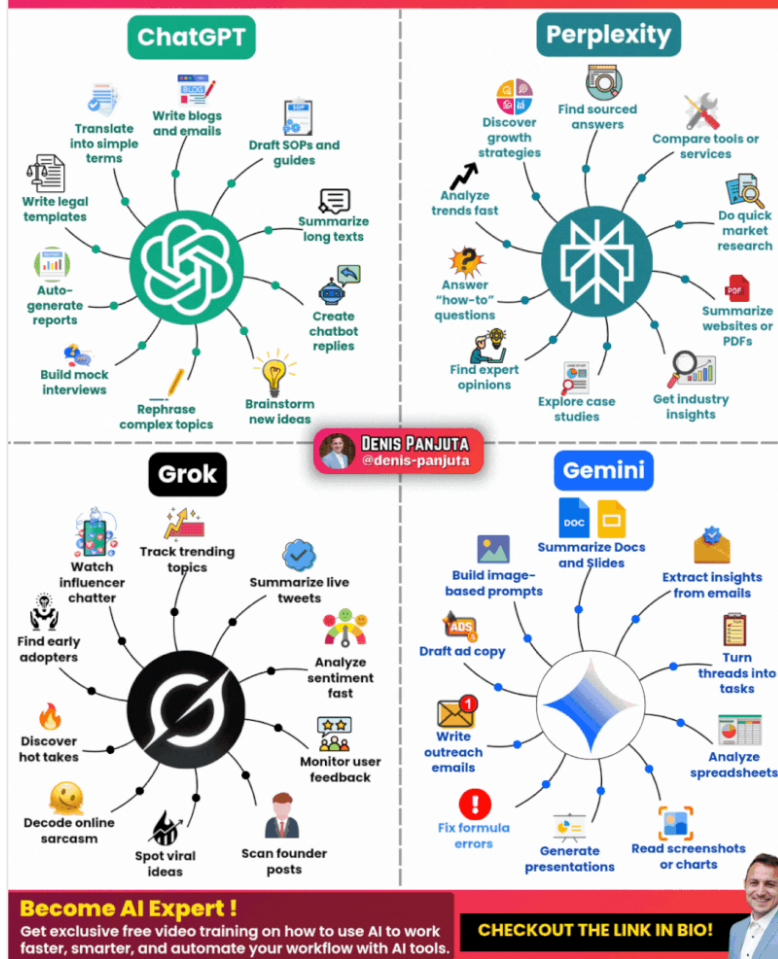
- Faculty generate content faster
- Students complete tasks more efficiently
- Administrative workflows are increasingly automated.

But beneath this progress lies a deeper question: **are we improving learning—or simply speeding up outputs?**

Much of today's AI use remains tool-driven and fragmented. This creates a disconnect. **Efficiency is scaling, but intentional learning is not.**

As AI reshapes how knowledge is produced and accessed, the risk is not AI use itself—but that **thinking becomes optional** if we are not mindful.

WHICH AI TOOL TO USE AND WHEN CHATGPT VS PERPLEXITY VS GROK VS GEMINI COMPARED



We are adopting AI. But are we designing our learning or work with it?

A Hands-on workshop Built on Design, Not Tools

Elevating Education:

The Whole-School GenAI Lesson Upgrade Framework

QUALITY CONTROL AND IMPLEMENTATION



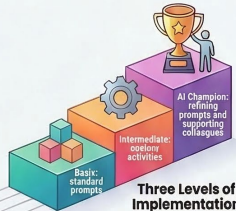
The Mandatory Quality Audit

Every lesson must be checked to ensure AI enhances student thinking rather than replacing it.



Purposeful vs. Decorative AI

AI integration must provide a meaningful improvement to student thinking to be included in the curriculum.



Three Levels of Implementation

THE TTN FRAMEWORK FOR STRATEGIC INTEGRATION & THE DISCERNMENT MODEL

Tool
(The "T" in TTN)
Using AI for functional enhancement or direct substitution of tasks, similar to legacy adoption models like SAMR.



Teammate
(The "T" in TTN)
Collaborative integration where AI serves as a creative partner for tailored materials, generating custom examples and analogies.



Neither
(The "N" in TTN)
Explicitly choosing NOT to use AI for specific tasks to preserve human-only cognitive processes or baseline reasoning.



Moving Beyond Passive Adoption: The TTN Framework explicitly addresses the cognitive, collaborative, and ethical dimensions unique to Generative AI.



Human-First Assessment Framing: Establish baseline reasoning through independent outlines before any GenAI intervention occurs to ensure authentic student learning.

THE DISCERNMENT MODEL: HUMAN-CENTRIC DESIGN

YOU are the Final Decider
Human agency must move from fear-based avoidance or uncritical reliance to intentional, accountable AI integration.



Authorship Equals Accountability: Intellectual ownership is defined by who is responsible for the thinking, regardless of who (or what) is doing the typing.

THE THREE-PHASE LESSON UPGRADE WORKFLOW



Phase 1: Curate Content Intelligence (Perplexity)
Use Perplexity to gather current real-world examples, case studies, and statistics to ensure lesson relevance and up-to-date data.

Phase 2: Engineer Deep Learning (ChatGPT)

Convert raw content into deep learning experiences featuring inquiry-based and collaborative activities that promote student analysis and evaluation.



Phase 3: Streamline Slide Conversion (NotebookLM)
Upload redesigned lesson plans to NotebookLM to automatically update existing slides with new activities, notes, and pedagogical structures.

NotebookLM

In response, SUTD hosted a **hands-on Teaching Exchange workshop (11 March 2026)** for SUTD faculty. This was not a session on tools. It was a **design intervention** built around a clear premise:

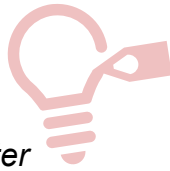
"To AI or not AI is not the question—but how to?"

The workshop was structured as a **transformation sprint**, where participants brought real lessons and redesigned them live—at micro (teaching activity), meso (lesson plan), or macro levels (course plan).

AI was introduced only within context, anchored to learning outcomes and teaching intent.

Its strength lay in the clarity of its underlying schema.

Thoughtfully designed, the session moved participants from experimentation to structure, from tools to workflows, and from individual use to **shared practice across the institution**.



The Capability Shift: Why Workflow Design Matters

The workshop introduced a critical shift: **AI is not the starting point—workflow is.**

In AI-enabled environments, students can bypass process and jump to answers. Without structure, learning becomes fragmented and output-driven.

This builds on earlier work of 'Fit-for-Purpose' framework for online learning which emphasizes that tools must be optimized for the functional purpose it is intended for. **The key difference now is that this is about connecting workflows across different AI systems and technologies.**

Participants learned to structure learning as a journey—curation, pedagogical designing and multimodal output creation, ensuring AI supports thinking rather than replacing it.

This makes reasoning visible and prevents cognitive shortcuts.

In an AI-enabled world, value lies not in access to answers—but in how we structure thinking.

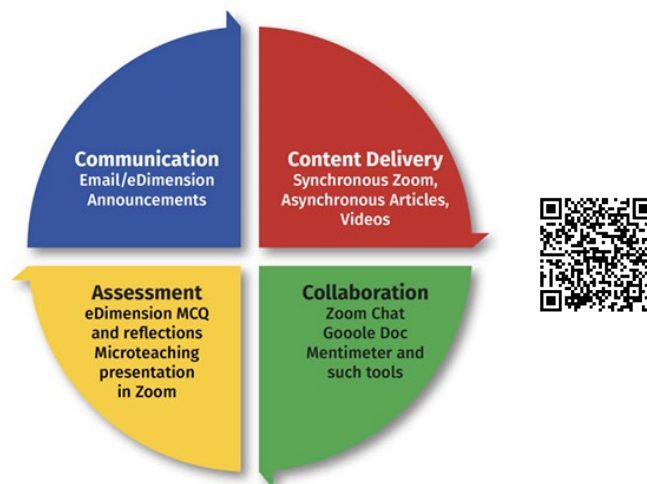
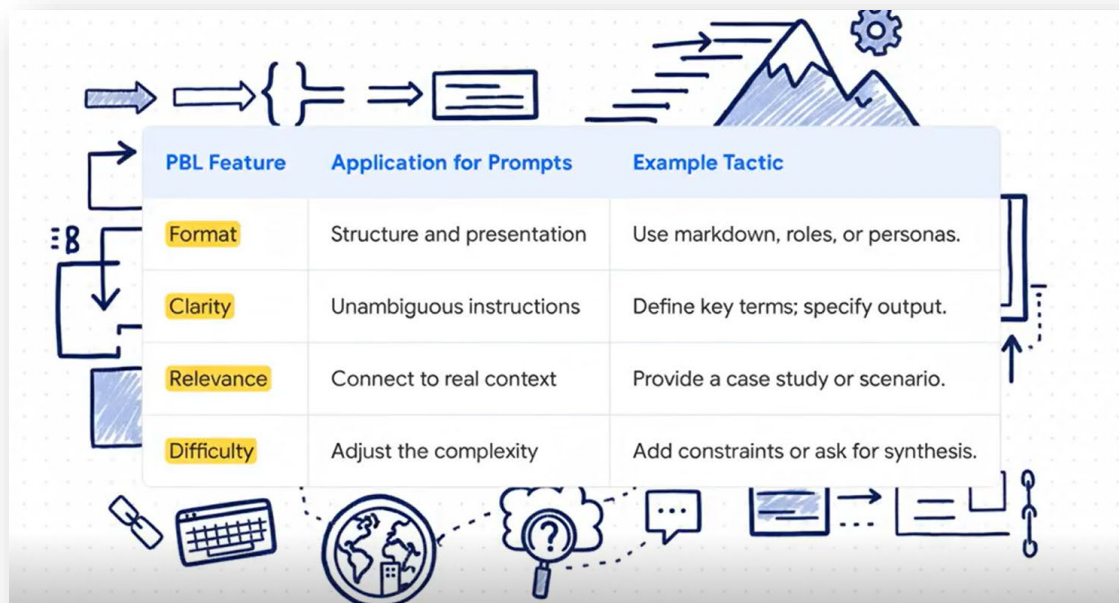


Figure 2: "Fit for purpose" teaching and learning design framework for blended/online teaching



Prompt engineering based on
pedagogical design principles

Another key aspect covered in the workshop was on **prompt engineering**.

Prompt engineering is not merely a technical skill—it is a pedagogical one. **At its core, it is a form of structured communication.**

When framed through a pedagogical lens, problem-based learning (PBL), **prompts** become more than instructions to AI; they are **designing tasks for the AI** to execute. In other words, it can be likened to **designing problems for the AI**. This idea builds on earlier work in problem-based learning and structured inquiry.

Instead of asking AI for answers, participants learned to design prompts as structured **problem frames**. For example, prompts were structured with **clear roles, context, constraints, and expected outputs**—mirroring how real-world problems are defined. This shifts prompting from “generate content” to **design a learning experience**.

This approach aligns closely with PBL principles: students engage with authentic challenges, explore multiple perspectives, and iteratively refine their understanding. AI becomes a **thinking partner**, helping surface possibilities—but not replacing the need for interpretation, judgment, and synthesis.

Ultimately, good prompting is not about getting better responses from AI—it is about **asking better questions of the problem itself**. When designed well, prompts guide learners through structured inquiry, making thinking visible and learning more intentional.

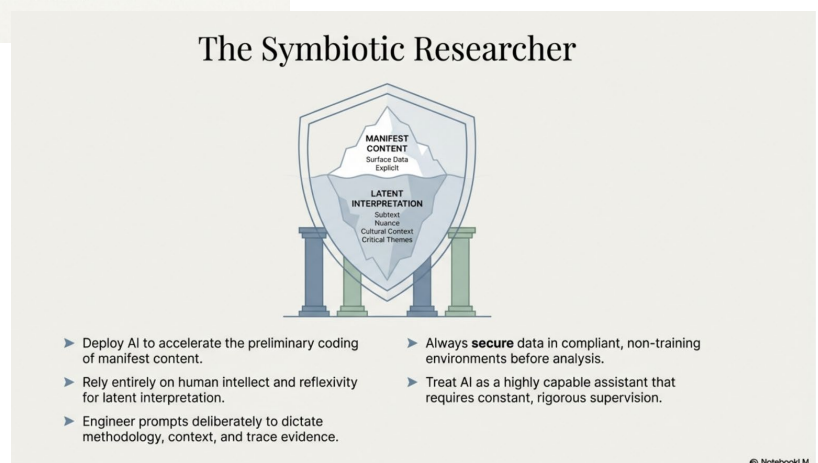
From Framework to Practice: A Real Example

This approach was applied in the redesign of a graduate course on *Research Innovation in the AI Era*.

The course begins with clear outcomes—mastery of qualitative and quantitative research—then builds a **project-based workflow** leading to a final research artifact. Each stage develops both technical skill and critical judgment.

AI is integrated using the **Tool–Teammate–Neither (TTN)** model. Students use AI for data processing, collaborate with it for coding and analysis, and rely on human judgment for interpretation and validation.

Importantly, this was not just demonstrated—**faculty in the workshop designed similar workflows for their own courses**. With the right structure, this approach is not only effective—it is **replicable across disciplines**.



Slide materials created during the workshop: Course plan + slides etc.

The Stack: Why These Tools, Why This Workflow

The tools used, Perplexity, Gemini, and NotebookLM, were not chosen for popularity, but for how they support different stages of thinking.

The emphasis was also on **freely available tools**, ensuring accessibility and scalability.

- Perplexity supports **exploration**, helping users gather credible, up-to-date knowledge.
- Gemini supports **analysis and creation**, enabling idea generation and activity design.
- NotebookLM supports **synthesis**, structuring materials within a controlled, user-defined dataset.

Each layer can be achieved by a different AI. The bottom line is **the intentional purpose of the AI at each step** and that it aligns with our working steps.

Another key principle is **orchestration**. These tools can be used in silos, but they are more effective when intentionally aligned to a workflow. This is because each AI has its strengths and the workflow should be designed to take advantage of the strengths.

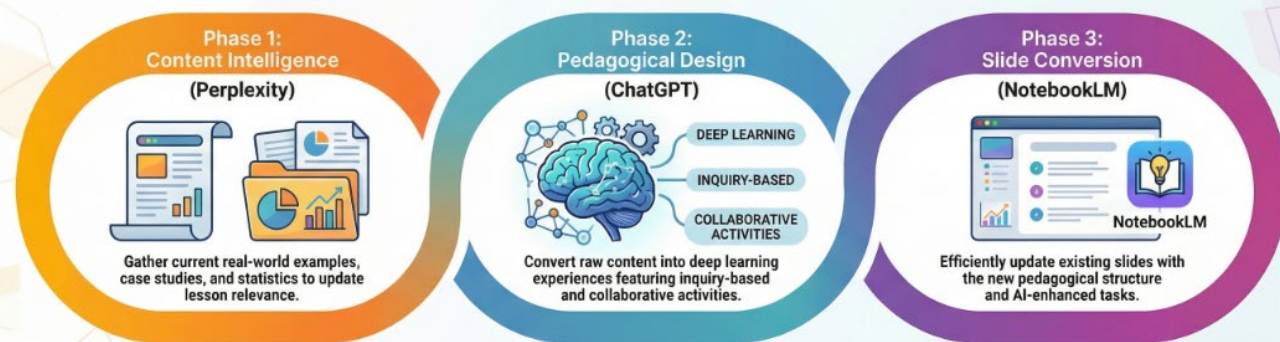
NotebookLM, in particular, reinforces disciplined practice, working with **bounded, user-defined data and intentional inputs**, rather than open-ended generation. This makes it particularly useful for teaching and learning material design.

It is a no-code Retrieval-Augmented Generation (RAG) tool, and differs from standard LLMs, such as ChatGPT, by using only the documents uploaded by the user to answer questions. This reduces hallucinations and provides citations to the source material. Also, the uploaded materials are not shared in public domain.

The question is not which tool to use—but
how to design the system in which they
operate.

The Whole-School GenAI Lesson Upgrade Framework

A standardized, three-phase workflow for integrating Generative AI into lesson planning to enhance deep learning and reduce workload.





Beyond Teaching — A Workflow for Everyone

Another question arising is whether this **strategic workflow approach is only for teaching**.

The answer is no. While it was introduced through course redesign, the underlying model—**Outcomes** → **Workflow** → **Tools** → **Discernment**—applies to any context where thinking, problem-solving, and decision-making are involved.

For **faculty**, this is most visible in course design. Instead of starting with slides or content, the workflow begins with learning outcomes, followed by structured activities and aligned assessments. AI supports each stage, but the design remains intentional and human-led.

For **students**, the same workflow applies to tackling assignments or projects. For example, instead of prompting AI directly for an answer, a student can structure their approach: define the problem, curate documents, analyze information, synthesize reports. This builds **discipline in thinking**, not just efficiency in output.

For **staff and professional work**, the workflow becomes a tool for clearer decision-making. Consider planning a programme or analyzing a dataset: start by defining the goal, use AI to curate market research and reports, evaluate trade-offs, and make a final decision. Here, AI supports exploration—but **ownership of decisions remains human**.

From Individual Action to Collective Transformation

This is not about mastering tools. It is about **designing how we think, learn, and work in an AI-enabled world**. We invite every member of the SUTD community—faculty, students, staff, and partners—to take one simple step:

- Pick one workflow. Redesign it with intent.
- Start with the outcomes. Structure the process.

Then come back and share.

- What changed?
- What worked?
- What would you do differently?

Because the real transformation will not come from any single tool or workshop—

It will come from a community that learns how to design better workflows—together.